



CLIMATE CHANGE, TRADE AND COMPETITIVENESS  
IS A COLLISION INEVITABLE?

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INTERNATIONAL TRADE LAW AND THE  
ECONOMICS OF CLIMATE POLICY:  
EVALUATING THE LEGALITY AND  
EFFECTIVENESS OF PROPOSALS TO  
ADDRESS COMPETITIVENESS AND  
LEAKAGE CONCERNS

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(DRAFT 1)

**ABSTRACT:**

Any unilateral effort by the United States to reduce greenhouse gas emissions by putting a price on carbon, such as a cap-and-trade system, raises concerns that it may harm the “competitiveness” of U.S. firms or undermine the measure’s environmental objective by causing carbon “leakage.” One oft-proposed response is to level the carbon playing field by imposing a border adjustment, such as a requirement to purchase emission allowances, on carbon-intensive imports from countries without a comparably effective climate policy. This paper weighs the expected benefits of border adjustments against their potential harms. It notes that a border adjustment on carbon-intensive imports from certain countries, such as that proposed in the Lieberman-Warner Climate Security Act, would do little to reduce the small amount of carbon leakage, though it would protect a few specific carbon-intensive

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domestic industries. At the same time, there is a risk that border adjustments would be abused for purely protectionist reasons, lead to retaliatory tit-for-tat trade wars, or be ruled WTO noncompliant. The paper focuses on this last concern about the consistency of border measures with international trade law and particularly on how that analysis should be informed by the economics of a cap-and-trade system. While the outcome of any complex legal question is difficult to predict, the paper identifies several ways in which a border adjustment on carbon-intensive imports from countries without comparably effective climate policies may be inconsistent with WTO law. As an alternative, some have proposed the use of free allocation of allowances to compensate adversely affected industries. The paper finds such measures, depending on how they are designed, may be more likely to be WTO compliant, though only to the extent that they are mostly ineffective in protecting employment and output in adversely affected industries. The paper concludes that the expected costs from both border adjustments and free allocation likely outweigh the benefits, and suggests alternative mechanisms to address climate change while mitigating leakage and adverse impacts on workers in carbon-intensive sectors.

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## I - INTRODUCTION

There is growing consensus that a market mechanism that puts a price on carbon, such as a cap-and-trade system or a carbon tax, should be at the heart of the most flexible and cost-effective way to address climate change.<sup>2</sup> Ideally, such an approach would be adopted as part of a multilateral agreement. The reason is that carbon is a global pollutant, so a ton of carbon emitted in Beijing harms New York just as much as a ton of carbon emitted in New York harms Beijing. This tragedy-of-the-commons nature of climate change raises concerns that any unilateral effort by the United States to put a price on carbon could disadvantage U.S. industrial firms or undermine the measure's environmental objective. These two concerns, in effect flip sides of the same coin, are referred to as "competitiveness" and "leakage", respectively. The competitiveness concern is that U.S. products, particularly carbon-intensive ones like steel, cement, chemicals, glass and paper, will be at a competitive disadvantage relative to foreign-made goods if the U.S. unilaterally imposes a carbon price policy and thus raises production costs for U.S. firms.<sup>3</sup> Related to this concern, emissions leakage occurs when a policy that raises the price of carbon-intensive domestic goods causes domestic production to shift abroad and domestic consumption to shift to more carbon-intensive imports, thus undermining the policy's effect on reducing global greenhouse gas (GHG) levels. Leakage also may occur as a result of reduced domestic demand for fossil fuel products, which depresses fuel prices in the global market and thus results in increased consumption.

An often-proposed response to the related concerns about competitiveness and leakage, which indeed has been incorporated into the leading cap-and-trade legislation, is to level the carbon playing field and encourage developing countries to adopt climate change

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<sup>2</sup> For a detailed discussion about why a market mechanism is preferable to alternative approaches, see Jason Furman, Jason Bordoff, Manasi Deshpande, and Pascal Noel, *An Economic Strategy to Address Climate Change and Promote Energy Security* (Hamilton Project Strategy Paper: The Brookings Institution October 2007).

<sup>3</sup> A recent study by the Peterson Institute and World Resources Institute identifies the following carbon-intensive manufacturing industries that compete with foreign producers: ferrous metals (iron and steel), nonferrous metals (aluminum and copper), nonmetal mineral products (cement and glass), paper and pulp, and basic chemicals. See TREVOR HOUSER ET AL., LEVELING THE CARBON PLAYING FIELD xiv (2008). The Lieberman-Warner bill specifically names "iron, steel, aluminum, cement, bulk glass, or paper" as "primary products," though it permits the Administrator to include "any other manufactured product that is sold in bulk for purposes of further manufacture" and generates significant greenhouse gas (GHG) emissions during production. America's Climate Security Act of 2007, S. 2191, 110<sup>th</sup> Cong., [hereinafter ACSA] Sec. 6001 (10). N.B- References to Lieberman-Warner throughout do not reflect revisions in the Manager's substitute amendment, released on May 21, 2008, available at [http://epw.senate.gov/public/index.cfm?FuseAction=Files.View&FileStore\\_id=aaf57ba9-ce98-4204-882a-1de307ecdb4d](http://epw.senate.gov/public/index.cfm?FuseAction=Files.View&FileStore_id=aaf57ba9-ce98-4204-882a-1de307ecdb4d).

policies by imposing a border adjustment that puts a price on the carbon contained in imports from countries without a similarly stringent climate policy. Under a cap-and-trade system, that border measure could take the form of a requirement that importers from countries without a comparable emissions reduction policy purchase emissions allowances to cover the carbon content of their products (or alternatively pay a tax equal to the allowance price). In theory, U.S. exporters might also be provided with allowances as rebates for the price of the embedded carbon in their products (though no proposal today calls for this).

Though perhaps sound in theory, the wisdom of leveling the carbon playing field by imposing border adjustments is more debatable when the expected benefits are weighed against the potential harms. As to the expected benefits, there are at least three. First, the environmental benefit of border adjustments would be to avoid some of the increase in foreign emissions that would otherwise occur in response to a unilateral U.S. climate policy. This potential increase in foreign emissions (that is, leakage) is small, however. Though estimates vary, most suggest that roughly 10 percent of the reduction in U.S. emissions will be replaced by increases in foreign emissions.<sup>4</sup> Most of U.S. emissions occur in non-tradable sectors, such as transport and residential housing. Further, some firms use little energy relative to other factors that may be more important in determining the location of trade.<sup>5</sup>

More importantly, according to a recent EPA analysis, a border adjustment on carbon-intensive manufactured imports, like that proposed in Lieberman-Warner, would only reduce that 10 percent by about half a percentage point because it: (1) ignores production leakage due to export competitiveness; (2) applies only to a subset of imports; and (3) does not address the increased global demand for fossil fuels in response to the

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<sup>4</sup> The EPA estimates U.S. emissions leakage rates under Lieberman-Warner of approximately 11 percent in 2030 and 8 percent in 2050. EPA Analysis of the Lieberman-Warner Climate Security Act of 2008 *S. 2191 in 110th Congress* March 14, 2008 [hereinafter EPA Analysis S. 2191], at 84, available at [http://www.epa.gov/climatechange/downloads/s2191\\_EPA\\_Analysis.pdf](http://www.epa.gov/climatechange/downloads/s2191_EPA_Analysis.pdf). Paltsev estimates leakage rates of 10.5 percent from Annex I countries under their Kyoto caps, though he estimates U.S. leakage rates (under never-ratified Kyoto targets) of only 5.5 percent. Sergey V. Paltsev. 2001. *The Kyoto Protocol: Regional and Sectoral Contributions to the Carbon Leakage* THE ENERGY JOURNAL, Vol. 22, No. 4. McKibben et al. estimated in 1999 that if the U.S. unilaterally adopted Kyoto targets, leakage rates would be roughly 10 percent in 2010. Warwick J. McKibbin et al., *Emissions Trading, Capital Flows and the Kyoto Protocol* (1999). Brookings Institution, Washington, D.C. The IPCC surveys a number of multiregional leakage estimates, finding a range of 5 to 20 percent. Intergovernmental Panel on Climate Change (IPCC). 2001. *Climate Change 2001: Mitigation: Summary for Policymakers*. Geneva: IPCC.

<sup>5</sup> For example, energy costs in most manufacturing industries are less than 2 percent of total costs. Richard D. Morgenstern et al., *Competitiveness Impacts of Carbon Dioxide Pricing Policies on Manufacturing*, RFF Issue Brief 7, Washington DC: Resources for the Future, 2007.

lower prices that reductions in the U.S. quantity demanded will have.<sup>6</sup> McKibben and Wilcoxon similarly find that border adjustments “would produce little in the way of environmental benefits.”<sup>7</sup> To keep the environmental benefit of preventing leakage from carbon-intensive industries in perspective, consider that only six percent of total U.S. emissions comes from these industries.<sup>8</sup> Moreover, if the U.S. unilaterally implements a border adjustment, it is easy to envision other countries reshuffling their trade to avoid the border charge. For example, the U.S. might import more from Europe and less from Brazil, China, and India, while these developing countries just send more to Europe. In the end, there may be little environmental impact unless other developed countries employ a similar approach. While some argue that border adjustments will induce developing countries to adopt greener practices, only a very small fraction of carbon-intensive products made in China are exported to the United States, so a border adjustment in the U.S. would be a small stick with which to pressure China to implement more costly low-carbon production processes. While China accounts for one-third of global steel production, less than one percent was sold to the United States; the U.S. market also accounts for just three percent of Chinese aluminum production, two percent of paper production, and less than one percent of both basic chemicals and cement.<sup>9</sup>

The second potential benefit is that border adjustments can protect certain industries by leveling the carbon playing field relative to carbon-intensive imports. The Environmental Protection Agency, for example, estimates that U.S. imports from Annex II countries (those

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<sup>6</sup> EPA analysis S. 2191, *supra* note 4, at 84. In a scenario where Annex II countries take no action on their own, but the U.S. unilaterally adopts an emissions reduction policy, the International Reserve Allowance Requirement in the Lieberman-Warner Climate Security Act reduces leakage from 361 MtCO<sub>2e</sub> to 350 MtCO<sub>2e</sub> in 2030 (or from 11.6 percent of U.S. reductions to 11.3 percent) and from 412 MtCO<sub>2e</sub> to 385 MtCO<sub>2e</sub> in 2050 (or from 8.2 percent of U.S. reductions to 7.6 percent). The EPA’s ADAGE model does not allow it to break out how much of the emissions leakage is from each of these various sources. In his paper measuring the emissions leakage from implementing the Kyoto protocol; however, Paltsev finds that leakage from Annex I demand reductions, which lead to reduced world prices and thus increased Annex II consumption, accounts for about one quarter of total leakage. Paltsev, *supra* note 4, at 68. It is important to note that the new version of Lieberman-Warner expands the definition of “covered products” to include not only primary carbon-intensive goods, but also manufactured goods for consumption that generate a substantial quantity of direct and indirect GHG emissions. Sec. 1311 (7) and (14). Even if such broader coverage did more to reduce leakage, it could create enormous administrative challenges. For most downstream goods, however, a carbon price is likely to be a small enough component of total cost that a border adjustment would do little to change trade flows.

<sup>7</sup> Warwick J. McKibbin & Peter J. Wilcoxon. *The Economic and Environmental Effects of Border Adjustments for Carbon Taxes*. The Brookings Institution, Washington DC. June 2008.

<sup>8</sup> Houser et al., *supra* note 3, at xiv.

<sup>9</sup> *Id.* at xvi.

not subject to the Kyoto Protocol caps) would be roughly 12 percent higher in 2050 without a border adjustment than they would be with one.<sup>10</sup> To some extent, the benefits to U.S. carbon-intensive manufacturers may be limited by the fact that many of the carbon-intensive imports to the U.S. come from Annex I countries that (with the exception of the U.S.) are already part of the Kyoto Protocol and thus would likely be exempt from most border adjustment proposals.<sup>11</sup> Indeed, Canada is the largest source of imports in all carbon-intensive industries except one, with Europe and Russia not far behind.<sup>12</sup> At the same time, however, the competitiveness benefit may still be considerable since the sectors (chemicals and cement) in which roughly two-thirds of U.S. imports come from Annex II countries are also among the carbon-intensive sectors that comprise the largest shares of U.S. GDP and employment.<sup>13</sup> Moreover, the growth rates for imports in these sectors have been more rapid than for imports in other carbon-intensive sectors.<sup>14</sup>

Third, as a political economy matter, border adjustments also may have the benefit of securing passage of a cap-and-trade bill in the U.S. Congress (where some measure to address adverse impacts on domestic industry will likely be necessary). They might also possibly encourage other developed nations to adopt a similar policy, which might do more to induce developing countries to negotiate an international agreement.

Against these expected benefits need to be weighed at least three expected costs of border adjustments. First, there is a risk that the border adjustment system could be abused for purely protectionist reasons by U.S. firms facing growing global competitive pressures. Second, there is a real risk that border adjustments could lead to retaliatory tit-for-tat trade wars, particularly with developing nations who may believe that developed nations bear a

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<sup>10</sup> EPA Analysis S. 2191, *supra* note 4, at 85. See also Morgenstern et al., *supra* note 5.

<sup>11</sup> Annex I countries account for 54 percent of U.S. steel imports, 78 percent of aluminum imports, 34 percent of chemicals imports, 87 percent of paper imports, and 35 percent of cement imports. See Houser et al., *supra* note 3, at 44. To be sure, some Annex I countries like Canada may fail to meet their targets and thus may not be judged to have taken comparably effective measures even though they are subject to the Kyoto Protocol's caps.

<sup>12</sup> Houser et al., *supra* note 3. Note that to the extent products from these countries already internalize a carbon price, U.S. products may be viewed as receiving a subsidy by emitting carbon without paying such costs. See JOSEPH E. STIGLITZ, MAKING GLOBALIZATION WORK (2006); Joseph Stiglitz (2006) "A New Agenda for Global Warming," *The Economists' Voice*: Vol. 3: Iss. 7, Article 3.

<sup>13</sup> Houser et al., *supra* note 3, at 11. Chemicals and cement comprise 1.68 percent and 0.43 percent, respectively, of U.S. GDP and 0.65 percent and 0.38 percent, respectively, of employment. Paper has roughly equal shares to cement: 0.44 percent of GDP and 0.36 percent of employment. Steel and aluminum comprise only 0.29 percent and 0.20 percent, respectively, of GDP and 0.19 percent and 0.11 percent, respectively, of employment. *Id.*, at Table 1.2.

<sup>14</sup> Houser et al., *supra* note 3, at 46, Fig. 3.3

greater responsibility for curbing climate change. India or China, for example, could well argue that the United States bears a greater responsibility for cumulative emissions and is still a much larger emitter on a per capita basis. Moreover, to this point, the U.S. has taken relatively little action to address climate change compared to many Kyoto countries, and there is a risk that any eventual climate change policy would have limited effectiveness once Americans understand the true impact of cap-and-trade on energy prices and political pressure then builds to ease that pain. In that case, introducing border adjustments as a legitimate tool to address climate change may encourage other nations such as those in the EU that are doing more to curb emissions to impose them on the U.S. Border adjustments for a carbon price could also set a dangerous precedent for the use of border tax adjustments to compensate for other competitive disadvantages seemingly imposed on domestic producers, such as minimum wage or health care regulations. Such risks to free trade, which delivers \$1 trillion of benefits annually to the U.S. economy,<sup>15</sup> are particularly harmful at a time when our nation's commitment to free trade is ever more in doubt.<sup>16</sup> Finally, there is a risk that a border adjustment would be illegal under World Trade Organization (WTO) law, which could potentially lead the WTO to authorize retaliatory tariffs.

In order to help fully understand the expected costs, and thus better compare them to expected benefits of competitiveness and leakage prevention measures, this paper analyzes this last concern regarding WTO law. Part II of this paper explores the consistency of border adjustments with WTO law. Given space constraints, this paper does not explore all the novel issues or claims that might be raised in evaluating such a complex legal question. Rather, the purpose of this section is to highlight the key questions that a WTO panel would raise in its analysis, focusing on how that legal analysis should be informed by the economics of a cap-and-trade system. As with any complex legal question, it is difficult to predict with any certainty how a WTO panel would rule, but there are certainly ways in which a border adjustment might not be compliant with WTO law. Viewing border adjustments through the lens of WTO law also raises broader questions about the wisdom of

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<sup>15</sup> Scott C. Bradford, Paul L.E. Grieco, and Gary Clyde Hufbauer, *The Payoff to America from Global Integration, in THE UNITED STATES AND THE WORLD ECONOMY*, (C. Fred Bergsten ed., 2005).

<sup>16</sup> According to a recent Pew Research Center poll, a 48% plurality said that free-trade agreements are a bad thing for the country, compared with 35% of the public who call them a good thing. In July 2004 the positions were reversed with 47% of respondents calling free-trade agreements positive, and 34% calling them negative. See Pew Research Center, *Obama's Image Slips, His Lead Over Clinton Disappears: Public Support for Free Trade Declines*, May 1, 2008, available at <http://peoplepress.org/reports/display.php3?PageID=1295>.

imposing border adjustments as a policy matter. As an alternative, some have proposed the use of free allocation to address competitiveness concerns and political exigencies, and Part III considers the desirability and WTO compatibility of that approach. Part III concludes that although free allocation, depending on its design, may be WTO compliant, that is precisely because it will be largely ineffective in protecting U.S. industries and workers, instead effectively constituting a transfer from government to firm shareholders. Part IV concludes that the expected costs from both border adjustments and free allocation may well outweigh the benefits, and suggests alternative mechanisms to address climate change while mitigating leakage and adverse impacts on workers in carbon-intensive sectors.

## II - EVALUATING BORDER ADJUSTMENTS UNDER WTO LAW

The World Trade Organization is the international organization responsible for overseeing the multilateral trading system. It was created in the Uruguay Round of trade negotiations out of what had previously been the General Agreement on Tariffs and Trade (GATT) institutional structure. The WTO also consists of a treaty that combines a variety of detailed agreements, including the GATT. The WTO has a dispute settlement system, under which an allegation of a violation of one or more of these agreements can be brought before a WTO panel and, on appeal, to the WTO Appellate Body. If the losing nation fails to adhere to the WTO's ruling, the complaining nation may seek authority to impose retaliatory tariffs. Because such a remedy, which precludes retaliation if the offending provision is cured, lacks deterrent power, "many governments engage in trade or economic policies that test the limits of WTO law. This pattern of behavior ought to be kept in mind in considering the extent to which WTO rules lacking clarity should constrain the design of climate policies."<sup>17</sup>

There are three steps in the analysis of whether a border adjustment is consistent with WTO law. First, is the border adjustment consistent with WTO market access commitments? If it is, is the border adjustment also consistent with the non-discrimination

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<sup>17</sup> Steve Charnovitz, Trade and Climate: Potential Conflict and Synergies in *Beyond Kyoto: Advancing the International Effort Against Climate Change*, Prepared for Pew Center on Global Climate Change, at 144 (2003).



obligations under the WTO? If it is not, is it permissible nonetheless under one of the exceptions provided for under GATT Article XX.<sup>18</sup>

As to the first question, GATT Article II prohibits tariffs above a particular ceiling and Article XI generally prohibits quantitative restrictions on imports. A border adjustment that applies to imports the same requirements imposed on domestic products is generally permissible as a border-enforced internal measure, assuming it does not violate national treatment or most-favored-nation treatment obligations (discussed below).<sup>19</sup> Assuming the border adjustment is imposed as part of an overall domestic cap-and-trade system, therefore, the WTO may well view it as a border-enforced internal measure.<sup>20</sup> The focus of this analysis, therefore, is on the second and third questions regarding whether the measure is discriminatory or falls under an environmental exception.

The analysis assumes that the U.S. adopts a cap-and-trade system and requires importers to purchase emission allowances at the U.S. market price, which seems the likeliest form of border adjustment given current policy discussions. Much of the analysis of the GATT's non-discrimination provisions and environmental exceptions would be the same even if the U.S. adopted a carbon tax and imposed a carbon tax on imports. Where important differences in the legal analysis exist, however, those will be noted.

#### *A. Non-Discrimination Obligations*

Even if a border adjustment is accepted as a permissible border-enforcement of an internal measure, the border adjustment must also not violate Article III's "national treatment" obligation by discriminating against imports or Article I's "most-favored nation" obligation by discriminating among importing nations. These two requirements are discussed in turn.

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<sup>18</sup> Other exceptions also exist, such as GATT Article XXI's security exceptions, though only Article XX is likely to be relevant for the purposes of border adjustments.

<sup>19</sup> *Ad* Article III explains: "Any internal tax or other internal charge, or any law, regulation or requirement of the kind referred to in paragraph 1 which applies to an imported product and to the like domestic product and is collected or enforced in the case of the imported product at the time or point of importation, is nevertheless to be regarded as an internal tax or other internal charge, or a law, regulation or requirement of the kind referred to in paragraph 1, and is accordingly subject to the provisions of Article III."

<sup>20</sup> As discussed further below, however, a border adjustment may fall outside the scope of GATT Article III since border-enforced internal measures can be applied to like "products," but a requirement to hold emission allowances may be considered a charge not on the "product," but rather on the process or production method (PPM).

*i. National Treatment*

Article III:4 requires that the United States accord to imported products “treatment *no less favorable* than that accorded to *like* products of national origin in respect of all laws, regulations and requirements affecting their internal sale, offering for sale, purchase, transportation, distribution or use.” (emphasis added) This section first discusses the meaning of “like products” and then whether, even if a border adjustment were found not to discriminate against “like products,” the amount of the border adjustment could be determined in a non-discriminatory fashion. It concludes by briefly noting how the foregoing analysis might differ if a domestic cap-and-trade regime were viewed not as an internal regulation, covered by Article III:4, but rather an internal tax, covered by Article III:2.

The principle behind Article III is straightforward: a Member cannot treat imported goods worse than domestic goods. In the case of climate change border adjustments, however, this seemingly straightforward principle proves exceptionally difficult to put into effect because the same goods from a global trade standpoint may be very different from a climate change standpoint if one is much more carbon-intensive than the other.

The Appellate Body has explained that whether two products are “like” under Article III:4 is to be determined by whether they are in a “competitive relationship,”<sup>21</sup> and thus a basic industrial product like steel would most likely be considered “like” other steel, even if they were produced in ways that emitted different amounts of carbon. An importer of more carbon-intensive steel might thus challenge a border adjustment that required it to purchase more allowances to reflect the higher carbon content by claiming its “like” product was being treated less favorably. If the U.S. regulation instead imposed an allowance requirement equal to that paid by U.S. manufacturers regardless of carbon content (for example, a charge per unit of steel imported), low-carbon producers (such as those in nations that rely more heavily on nuclear or natural gas) would likely object on the grounds that their products were being treated less favorably.

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<sup>21</sup> Appellate Body Report on *European Communities – Measures Affecting Asbestos and Asbestos-Containing Products* WT/DS135/AB/R, 12 March 2001 [hereinafter *EC-Asbestos*], at para. 99.

The U.S. might respond that high-carbon steel is not “like” lower-carbon steel because one contributes more than the other to climate change. Generally speaking, the interpretation of “like” products does not permit differentiation based on the way a product is made (so-called process and production methods, or PPMs), but rather only on the product’s physical characteristics.<sup>22</sup> Thus, the Appellate Body found that chrysotile asbestos fibres were not “like” fibres made from other materials given the public health risks of asbestos.<sup>23</sup> By contrast, tuna caught in a dolphin-friendly way was “like” tuna caught in a dolphin-unfriendly way.<sup>24</sup> Given that steel created in a climate-friendly way is physically indistinguishable from steel created in a climate-unfriendly way, GATT jurisprudence suggests that a measure that distinguishes like products based on how much carbon was emitted in their creation might not fall within the scope of Article III.<sup>25</sup>

The distinction in GATT jurisprudence between a product, on the one hand, and PPM on the other hand, need not be fatal to a carbon border adjustment’s legality, however. WTO case law suggests that PPM distinctions between like products are most likely not permissible under Article III, but may be permitted under Article XX.<sup>26</sup> Indeed, in the *US—Gasoline* and *US—Shrimp* cases, the Appellate Body ruled that PPM restrictions were not necessarily GATT inconsistent because they fell within the scope of Article XX.<sup>27</sup>

Even if a border adjustment were found not to discriminate between like products, importers would need to pay the same price per ton of carbon emitted as domestic producers (through the purchase of allowances in a market) in order to be treated “no less

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<sup>22</sup> MITSUO MATSUSHITA ET AL., *THE WORLD TRADE ORGANIZATION: LAW, PRACTICE, AND POLICY* 163 (2003); Robert E. Hudec, *The Product-Process Doctrine in GATT/WTO Jurisprudence*, in *NEW DIRECTIONS IN INTERNATIONAL ECONOMIC LAW: ESSAYS IN HONOUR OF JOHN H. JACKSON* 187, 191 (Marco Bronckers & Reinhard Quick eds., 2000).

<sup>23</sup> *EC—Asbestos AB*, *supra* note 21.

<sup>24</sup> *United States – Restrictions on Imports of Tuna*, GATT BISD (39<sup>th</sup> Supp.) at 155 (1993), reprinted in 30 I.L.M. 1594 (1991) (unadopted); *United States – Restrictions on Imports of Tuna*, DS29/R, 16 June 1994, reprinted in 33 I.L.M. 839 (1994) (unadopted).

<sup>25</sup> Jagdish Bhagwati & Petros C. Mavroidis, *Is action against US exports for failure to sign Kyoto Protocol WTO-legal?*, *WORLD TRADE REVIEW* 299 (2007).

<sup>26</sup> See Steve Charnovitz, *The Law of Environmental ‘PPMs’ in the WTO: Debunking the Myth of Illegality*, 27 *YALE J. INT’L L.* 59, 97 (2002); Hudec, *supra* note 22, at 192.

<sup>27</sup> Appellate Body Report on *United States – Standards for Reformulated and Conventional Gasoline*, WT/DS2/AB/R, 20 May 1996, [hereinafter *US-Gasoline AB*], at paras. 13-29; Appellate Body Report on *United States – Import Prohibition of Certain Shrimp and Shrimp Products*, WT/DS58/AB/R, 15 May 1998 [hereinafter *US-Shrimp AB*], at paras. 141-149; Appellate Body Report on *United States – Import Prohibition of Certain Shrimp and Shrimp Products (Implementation under Article 21.5)*, WT/DS58/RW/AB, 21 November 2001 [hereinafter *US-Shrimp Article 21.5 AB*], at paras. 149-152.

favorably.” The problem, however, is that it can be difficult to agree on what price U.S. manufacturers paid to emit a ton of carbon under a domestic cap-and-trade scheme.

There are several ways in which the economic incidence of allowance costs may be in dispute, but just consider the widely discussed question of whether allowances should be auctioned or freely allocated.<sup>28</sup> It is often assumed that to the extent allowances are freely distributed, the price charged to importers would need to be discounted proportionally.<sup>29</sup> The problem with this approach, however, is that regulated entities, say upstream importers or extractors of fossil fuels, will still pass on allowance costs to firms and consumers even if they receive allowances for free.<sup>30</sup> The reason is that allowances, even ones received for free, can be sold for cash in a liquid secondary market and thus there is an opportunity cost to using one to emit a ton of carbon. An emitter will decide not to sell an allowance only if it can recoup that opportunity cost, which happens by raising prices. In such a scenario, carbon-intensive manufacturers (and their customers) would still bear the full market price for emitting carbon, and thus there would be no reason to reduce that price for importers. Indeed, even if the manufacturers themselves received the free allowances, they would still pass the opportunity cost of using allowances to emit carbon on to their customers. As discussed in greater detail later, that is precisely why the CBO and other analysts think that free allowances have essentially the same effect on emissions and output as auctioned allowances. Thus, it would not disadvantage importers to pay the market price for carbon even if domestic manufacturers received free allowances themselves. That is why allowance

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<sup>28</sup> Another complication regarding the economic incidence of allowance costs arises in cost-of-service regulated electricity markets. In such markets, the full price of carbon may not be passed on to manufacturers, and thus it would discriminate against foreign imports to charge them the market price for emissions allowances.

<sup>29</sup> See, e.g., Joost Pauwelyn, *U.S. Federal Climate Policy and Competitiveness Concerns: the Limits and Options of International Trade Law*. Duke University, Nicholas Institute for Environmental Policy Solutions, NI WP 0702, April 2007, at 22.

<sup>30</sup> See CONG. BUDGET OFFICE, *TRADE-OFFS IN ALLOCATING ALLOWANCES FOR CO<sub>2</sub> EMISSIONS 1* (2007), and CONG. BUDGET OFFICE, *SHIFTING THE BURDEN OF A CAP-AND-TRADE PROGRAM* (2003). Notably, the incidence of a border adjustment would parallel the incidence of a domestic cap-and-trade program. In a domestic cap-and-trade regime, the statutory incidence would fall on the firms required to surrender allowances at the end of the year, while the economic incidence falls primarily on downstream consumers of energy and final products (since the demand for energy is so inelastic). With a border adjustment, the foreign firm exporting goods to the U.S. would face the statutory incidence—they would actually have to buy the allowances or pay the government-imposed border charge—while the economic incidence falls mostly on American consumers, who will see the cost of the border adjustments priced into the final retail price of the goods they buy.

allocation is a distributional issue that should be separated from the issue of compliance obligations under the cap.<sup>31</sup>

Finally, even if the right price could be determined, that carbon price would need to be imposed as a border adjustment *based on the carbon content of the import*, which can be exceptionally complicated to determine. Foreign manufacturers asked to provide detailed carbon content information may be unwilling to do so, or even unable given increasingly disaggregated global supply chains for production.<sup>32</sup> In that case, the U.S. might calculate the border adjustment based on external industry-wide benchmarks, as proposed for the U.S. BTU tax in 1993. In *US—Gasoline*, however, the GATT Panel struck down a U.S. regulation assigning foreign producers a standard baseline while domestic refiners got an individual one.<sup>33</sup> In the case of industrial goods, in which the amount of carbon emitted can vary dramatically (depending on such factors as the source of energy, such as nuclear versus coal, and the production process, such as lower-carbon steel mini-mills versus higher-carbon integrated mills), applying one baseline carbon content to every product regardless of how and where it was produced may well be considered discriminatory.

While the above discussion has largely discussed a cap-and-trade system as a domestic regulation, the WTO might alternatively view it as falling under the national treatment requirements of Article III:2, which concerns “internal taxes or other internal charges of any kind” that are applied “directly or indirectly” on products. The requirement to purchase allowances that force firms to internalize the social cost of the carbon they emit may be viewed as effectively the same as a carbon tax. Indeed, from an economic perspective, if there were complete certainty about the costs and benefits of a carbon price, there is little difference between a carbon tax and a cap-and-trade system. If the government were to issue the precise number of permits so that the market settled on a value of \$15 to emit a ton of carbon, that would be the same as setting a \$15 per ton carbon tax. In reality, however, there is considerable uncertainty about the costs of climate change and of policies to mitigate it. Quantity instruments like cap-and-trade systems provide certainty about how

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<sup>31</sup> Raymond J. Kopp, *Allowance Allocation*, Resources for the Future Washington DC: May 2007.

<sup>32</sup> See Paul Krugman, *Trade and Wages Reconsidered*, BROOKINGS PAPERS ON ECONOMIC ACTIVITY (Douglas Elmendorf, N. Gregory Mankiw and Lawrence Summers, eds.) Spring, 2008 [forthcoming].

<sup>33</sup> The Panel rejected the U.S. defense that data from foreign gasoline producers was unverifiable, though it did suggest that using an external benchmark might be permissible when “a baseline could not be established because of an absence of data.” Panel Report on *United States - Standards for Reformulated and Conventional Gasoline*, WT/DS2/R, 29 January 1996, at para. 6.28.

much emissions will be reduced but uncertainty about the costs, while price instruments like carbon taxes provide certainty about costs but uncertainty about just how much emissions will be reduced.

Viewed in this way, the carbon price signal created by requiring the remission of an allowance to emit a ton of carbon might be viewed as equivalent to a tax,<sup>34</sup> and the requirement for importers to buy an allowance for the carbon content of their products may be judged “a charge equivalent to an internal tax.”<sup>35</sup> In that case, many of the same questions would exist as to whether a tax on the process or production method (so-called “hidden taxes” or *taxes occultes*), rather than on inputs incorporated into the final product, may be adjusted at the border.<sup>36</sup> Notably, a GATT panel in *US—Superfund* permitted the United States to impose a domestic tax on certain chemicals on imports that had used the same chemicals “as materials in the manufacture or production” of these imports, though the panel did not address whether these chemicals had to be physically present in the imported product.<sup>37</sup> The specific question whether hidden or process taxes may be adjusted at the border, however, was left unanswered by a 1970 GATT working group on the issue.<sup>38</sup> Even if a carbon tax is judged to be adjustable at the border, it would still have to meet the national treatment obligations of Article III, and many of the concerns discussed above would still exist.

## *ii. Most Favored Nation Treatment*

The second non-discrimination obligation a border adjustment must satisfy is Article I’s “most-favored nation” requirement, which prohibits discrimination between WTO

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<sup>34</sup> See R. Ismer & K. Neuhoff, *Border Tax Adjustments: A Feasible Way to Address Nonparticipation in Emission Trading*, CMI Working Paper, 36, January 2004, at 4-8, available at <http://ideas.repec.org/p/cam/camdae/0409.html>.

<sup>35</sup> GATT Art. II:2(a).

<sup>36</sup> For a discussion of these issues, see Pauwelyn, *supra* note 29, at 19-20.

<sup>37</sup> GATT Panel Report on *United States—Taxes on Petroleum and Certain Imported Substances*, GATT BISD 34S/136, 17 June 1987, at para. 2.5 and 5.2.4.

<sup>38</sup> “It was generally felt that while this area of taxation was unclear, its importance—as indicated by the scarcity of complaints reported in connection with adjustment of taxes occultes—was not such as to justify further examination.” GATT Working Party Report on *Border Tax Adjustments*, GATT BISD 18S/97 2 December 1970, at para. 15. Pauwelyn provides an argument that a carbon tax should be adjustable at the border, see *supra* note 29, at 20-21.

Members. Border adjustment proposals typically only apply to imports from countries that do not have a comparably effective climate policy already in place, since otherwise imports would effectively be paying a carbon price twice. Yet such an approach would seem to violate Article I since it would be treating two “like” products differently depending on their origin. The United States might argue that the treatment is nondiscriminatory because the restriction is based not on origin but on conditions of production that apply equally to all nations, and that the treatment differs only because the objective of mitigating climate change is being met differently in different places.<sup>39</sup> Even supporters of border adjustments, however, recognize that such a claim would face difficulty.<sup>40</sup> Indeed, Article I covers not only *de jure* but also *de facto* discrimination, which the Appellate Body found to exist in *Canada—Automobiles* even though the challenged measure was facially origin-neutral.<sup>41</sup> As “[t]he MFN obligation under the GATT is unconditional and quite broad,”<sup>42</sup> there is good reason to believe the WTO would find a violation if border adjustments applied only to certain countries.

Moreover, even if the WTO permitted differential treatment, it would be very difficult to determine which countries have comparably effective climate policies in a way that did not give rise to discrimination claims. The EU’s cap-and-trade system, for example, covers only half the economy. Many EU countries that impose carbon taxes have exempted energy-intensive industries.<sup>43</sup> Moreover, other nations (like Japan) might eschew market mechanisms altogether in favor of command-and-control regulations. It is also possible to envision ways in which governments could modify their tax systems—effectively doing a corporate tax swap—that would have little or no effect on emissions, but satisfy an assessment of comparable climate policy burdens. For example, a government could cut

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<sup>39</sup> In the *Canada—Automobiles* decision, for example, the Panel suggested that origin-neutral criteria might be permissible under Article I. Appellate Body Report on *Canada—Certain Measures Affecting the Automotive Industry*, WT/DS139/AB/R, WT/DS142/AB/R, 11 February 2000 [hereinafter *Canada—Automobiles*] at paras. 3.22-3.24. But see Panel Report on *Indonesia—Certain Measures Affecting the Automobile Industry* WT/DS54, 59 & 64/R, 23 July 1998, at para. 14.143 (ruling that “GATT case law is clear to the effect that any . . . advantage (here tax and customs benefits) cannot be made conditional on any criteria that is not related to the imported product itself”).

<sup>40</sup> Memorandum from Andrew W. Shoyer, WTO Background Analysis of International Provisions of U.S. Climate Change Legislation (February 28, 2008) available at [http://energycommerce.house.gov/cmte\\_mtg/110-eaq-hrg.030508.Morris-testimony.pdf](http://energycommerce.house.gov/cmte_mtg/110-eaq-hrg.030508.Morris-testimony.pdf).

<sup>41</sup> *Canada—Automobiles*, *supra* note 39, at para. 86.

<sup>42</sup> Matsushita et al., *supra* note 22, at 147.

<sup>43</sup> THE WORLD BANK, INTERNATIONAL TRADE AND CLIMATE CHANGE: ECONOMIC, LEGAL, AND INSTITUTIONAL PERSPECTIVES 24 (2008).

excise taxes on fossil fuels while imposing a carbon tax. The after-tax cost of using fossil fuels by, say, steel firms would be unchanged, but the country could argue that it has implemented a comparable climate policy to the United States. In theory, rather than divide countries into two groups—those with and without comparably effective climate policies—all importers might be required to pay the difference between the U.S. market price for allowances and whatever carbon price they paid in their home country. As an administrative matter, however, such an approach would be massively complex and likely unworkable.

The approach incorporated in Lieberman-Warner to determine whether another nation has taken comparable action is to measure GHG emissions each year against a baseline. As an initial matter, nations like China or India may argue that emissions should be measured by geographical location of consumption, not production. China, after all, now produces half of the world's cement and flat glass and a third of its steel; industry thus accounts for 71 percent of energy demand in China, as compared to 31 percent in Europe and 25 percent in the U.S.<sup>44</sup> Leaving aside such normative questions, measuring each nation's emissions against a baseline also ignores that two nations may rationally achieve identical long-term reductions according to different annual emission patterns and from different sectors of the economy. The long-term cumulative nature of climate change means that the marginal benefits of reducing GHG emissions vary little from year to year, while the costs might vary greatly. Thus, it may be economically efficient for a country to make fewer cuts in the short-term and more in the long-term, and annual measures of GHG emissions to determine comparable action would fail to allow for this temporal flexibility. Additionally, determining whether a nation had taken comparably effective measures by measuring GHG emission reductions would fail to take into consideration the impact of land use changes and deforestation on climate change, which account for roughly one-fifth of GHG emissions.<sup>45</sup> It also ignores that some countries might increase (or decrease) emissions from a given baseline due to changes in population growth or GDP growth or other factors. For example, Russia and its former republics have lower emissions than they did in 1990 and thus can easily hit a target such as reducing emissions to or below 1990 levels.

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<sup>44</sup> Daniel H. Rosen & Trevor Houser. *China Energy: A Guide for the Perplexed* (2007). Center for Strategic and International Studies and Peterson Institute for International Economics, Washington, DC.

<sup>45</sup> According to the World Resources Institute, 23 percent of CO<sub>2</sub> emissions (18 percent of all GHG emissions) in 2000 came from land use change and forestry, see *Climate Analysis Indicators Tool*, World Resources Institute, available at <http://cait.wri.org/> accessed on 05/08/2008.



*B. Article XX Exceptions*

Based on the WTO jurisprudence discussed above, there is reason to believe that a border adjustment that requires importers of carbon-intensive goods to purchase allowances at the U.S. market price for the carbon emitted in production might be found to violate the United States' most-favored-nation treatment obligations if applied only to countries that do not have comparably effective policies. As for the United States' national treatment obligations, a border adjustment that charged "like" products differently based on how much carbon was emitted in producing each product may be viewed as a prohibited PPM restriction. In that case, the border adjustment would then be permissible only if it satisfied one of the environmental exceptions in Article XX of the GATT and then, if it did, whether it was also consistent with the introductory paragraph ("chapeau") of Article XX.

The most relevant exceptions are found in Article XX(g) and XX(b). The exception in Article XX(g) applies to measures "relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption." Article XX(b) provides an exception for measures "necessary to protect human, animal or plant life or health." Since the WTO has found that "relating to" is a lower standard to meet than "necessary to,"<sup>46</sup> this paper focuses on the Article XX(g) exception.

*i. Article XX(g) Exception for "Conservation of Exhaustible Natural Resources"*

There are three parts to the Article XX(g) analysis, two of which should be satisfied without much difficulty. A low-carbon atmosphere, necessary to avoid catastrophic climate change, should be viewed as an "exhaustible natural resource"; although carbon only stays in the atmosphere for around 100 years, the WTO has previously found that clean air is a resource capable of depletion even if it is renewable.<sup>47</sup> A border adjustment would also be

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<sup>46</sup> See *US—Gasoline AB*, *supra* note 27, at 14-19.

<sup>47</sup> *Id.* at 14.

“made effective in conjunction with restrictions on domestic production or consumption” if it is part of an overall U.S. cap-and-trade bill.

A more difficult question is whether a border adjustment is “related to” the goal of mitigating climate change. GATT panels have interpreted “relating to” to mean “primarily aimed at” conservation.<sup>48</sup> In *US—Gasoline*, the Appellate Body found the disputed measure satisfied XX(g) because it had a “substantial relationship” to the conservation of clean air.<sup>49</sup> In *US—Shrimp*, XX(g) was satisfied because the import ban on shrimp harvested without devices to avoid harming turtles while fishing demonstrated a “means and ends relationship” that was “close and real” with the goal of protecting endangered turtles.<sup>50</sup> It is less clear whether a border adjustment would satisfy the test of being primarily aimed at and substantially related to the goal of reducing GHG emissions when estimates suggest the policy might do little to reduce leakage. Indeed, in explaining why the disputed measures satisfied XX(g), the Appellate Body in *US—Gasoline* noted that without baselines, the goal of reducing the level of air pollution “would be substantially frustrated.”<sup>51</sup> In *US—Shrimp*, the Appellate Body accepted that turtle excluder devices “would be an effective tool for the preservation of sea turtles.”<sup>52</sup> It is harder to argue that the United States’ goal of mitigating climate change would be less “effective” or “substantially frustrated” without border adjustments on carbon-intensive imports from certain countries.<sup>53</sup>

On the other hand, the Appellate Body in those cases did not ask *how much* of an impact the policy would have on protecting sea turtles, only whether it would have that effect. Similarly, the fact that border adjustments for climate change would have limited impact on total emissions should not necessarily count against them. It is not relevant under XX(g) (as it is under XX(b)) that there may be more effective or less trade restrictive options available. WTO Member governments retain “a large measure of autonomy to determine their own policies on the environment.”<sup>54</sup> Moreover, the Appellate Body has previously explained that XX(g) must be “read ... in light of contemporary concerns of the community

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<sup>48</sup> *Id.*, at 18-19; GATT Panel Report on *Canada – Measures Affecting Exports of Unprocessed Herring and Salmon*, L/6268, BISD 35S/98, 22 March 1988, at paras. 4.5-4.6.

<sup>49</sup> *US—Gasoline AB*, *supra* note 27, at 19.

<sup>50</sup> *US—Shrimp AB*, *supra* note 27, at para. 141.

<sup>51</sup> *US—Gasoline AB*, *supra* note 27, at 19.

<sup>52</sup> *US—Shrimp AB*, *supra* note 27, at para. 141.

<sup>53</sup> *Id.*

<sup>54</sup> *US—Gasoline AB*, *supra* note 27, at 30.

of nations about the protection ... of the environment,”<sup>55</sup> and few issues are of such universal concern at present as climate change.

*ii. Article XX Chapeau*

Even if a border adjustment satisfies XX(g), it must also be justified under the “chapeau,” or opening clause, to Article XX, designed to prevent provisions that are arbitrary, discriminatory or protectionist. The chapeau requires that “measures are not applied in a manner which would constitute a means of arbitrary or unjustifiable discrimination between countries where the same conditions prevail, or a disguised restriction on international trade.” Broadly speaking, the purpose of the chapeau is to prevent the “abuse of the exceptions” in Article XX<sup>56</sup> and ensure that they are “exercised in good faith to protect interests considered legitimate under Article XX, not as a means to circumvent one Member’s obligations towards other WTO Members.”<sup>57</sup> The chapeau thus embodies the recognition by WTO Members of the need to maintain a balance between the right to invoke an Article XX exception and the substantive rights under the GATT.<sup>58</sup> Several of the leading environmental cases under the WTO have turned on the standards set forth in the chapeau. In *US—Gasoline*, *US—Shrimp*, and most recently *Brazil—Tyres*, for example, the Appellate Body found the offending measure to be provisionally justified by one of the environmental paragraphs of Article XX (either XX(g) or XX(b)), but then found the measure violated the chapeau of Article XX.

The Appellate Body has explained that whether the application of a measure violates the chapeau “should focus on the cause or rationale given for the discrimination.”<sup>59</sup> As a theoretical matter, a full border adjustment levied based on the carbon-intensity of an import has a plausible rationale consistent with XX(g), namely to minimize carbon leakage that can undermine the effectiveness of a U.S. cap-and-trade system in lowering GHG emissions. Moreover, excluding nations with comparably effective climate policies from the scheme

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<sup>55</sup> *US—Shrimp AB*, *supra* note 27, at para. 129.

<sup>56</sup> *US—Gasoline AB*, *supra* note 27, at 22.

<sup>57</sup> Appellate Body Report on *Brazil—Measures Affecting Imports of Retreaded Tyres* WT/DS332/AB/R, 3 December 2007 [hereinafter *Brazil—Tyres AB*], at paras. 215.

<sup>58</sup> *US—Shrimp AB*, *supra* note 27, at para. 156.

<sup>59</sup> *Brazil—Tyres AB*, *supra* note 57, at para. 246.

also has a defensible environmental rationale, which is that those nations are already taking measures to reduce carbon emissions and thus leakage to them should be of minimal concern.

At the same time, the chapeau addresses the “detailed operating provisions” of the measure at issue and how it is “actually applied.”<sup>60</sup> When consideration is given to the administrative complexities and likely implementation, there are at least five possible reasons why a border adjustment, depending on how it is designed, may violate the chapeau.

First, as discussed above, a border adjustment on carbon-intensive manufactured goods from countries that have not taken comparably effective action to address climate change, as commonly proposed today, might do little to actually reduce overall leakage. For those carbon-intensive sectors that face competition from Annex II countries, however, such border adjustments may help mitigate the adverse impacts of a carbon price.<sup>61</sup> Yet there is no exception in Article XX for preserving the health of U.S. firms, only the environment, and thus the ostensible purpose for the offending measure must be a “rational connection” to an objective of one of the Article XX paragraphs.<sup>62</sup> One leading scholar explains it this way: “[I]t is one thing for the United States to demand that the shrimp it imports be caught in a turtle-safe way so as to safeguard turtles. Yet it is an entirely different matter to seek to ‘level the playing field’ by insisting that foreign producers use the same production practices as U.S. shrimpers so as to offset any regulatory cost differences between domestic and foreign producers. This latter motivation should not be shielded by GATT Article XX.”<sup>63</sup> A WTO panel, balancing the rights of a member to invoke an Article XX derogation and the rights of other members,<sup>64</sup> may thus find border adjustments to be a form of stealth protectionism given the larger impact on protecting certain U.S. firms than on reducing overall GHG emissions. Indeed, the Appellate Body recently confirmed that it is acceptable

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<sup>60</sup> *US—Shrimp AB*, *supra* note 27, at para. 160.

<sup>61</sup> See *supra* notes 4-14. As one scholar has noted in the context of climate change policies, “[w]hile one can easily see a competitiveness rationale to use a border tax adjustment, it is difficult to visualize a valid environmental reason under GATT Article XX in support of a border adjustment.” Charnovitz, *supra* note 17, at 148.

<sup>62</sup> *Brazil—Tyres AB*, *supra* note 57, at para. 227.

<sup>63</sup> Charnovitz, *supra* note 26, at 106.

<sup>64</sup> See *US—Shrimp AB*, *supra* note 27, at para. 156.

to take into account as a relevant factor the *effects* of discrimination, not just the cause or rationale of the discrimination.<sup>65</sup>

Second, the measure likely will have to permit importers to demonstrate how much carbon they emitted individually and pay for allowances on that basis. The current provision in Lieberman-Warner, for example, does not do that. Rather it prescribes a particular formula used to determine the allowance requirement for a category of covered goods in a covered foreign country.<sup>66</sup> Manufacturers in that category would thus have the same allowance requirement regardless how much carbon each actually emitted in production. Such a provision may be ruled arbitrary and unjustifiable discrimination, just as the baseline establishment method in *US—Gasoline* was found to be because domestic refiners were permitted to establish an individual baseline while foreign refiners had to accept the EPA's statutory baseline. Moreover, use of a nationwide calculus for carbon content actually weakens the ostensible climate benefits of the border adjustment. Foreign firms will have little incentive to reduce the carbon footprint of their products if doing so would not change the way their products are treated at the border (though the incentive for government action may still exist).

Third, the U.S. cannot require an exporting country to implement a market mechanism, but must allow flexibility for nations to pursue other approaches “comparable in effectiveness.”<sup>67</sup> The Appellate Body has interpreted “arbitrary or unjustifiable discrimination” to preclude requiring essentially the same program as the U.S. puts in place to address climate change.<sup>68</sup> As a practical matter, this may significantly mute the impact of border adjustments. As discussed above, it is difficult to judge the efficacy of climate change policies in the short-term, and thus other nations might argue that a variety of policies—from command-and-control regulations to the sort of voluntary targets adopted in Japan—should be viewed as comparably effective.

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<sup>65</sup> *Brazil—Tyres AB*, *supra* note 57, at para. 230.

<sup>66</sup> ACSA, *supra* note 3, at Title VI, Sec 6001(d).

<sup>67</sup> *U.S.—Shrimp, Article 21.5 AB*, *supra* note 27, at paras. 137-144. It is also worth noting that a trade mechanism that requires comparability in form as well as burden runs counter to the Framework Convention on Climate Change and the Kyoto Protocol, which provides discretion to countries on how they implement their climate change policy goals.

<sup>68</sup> *Id.* at para. 144.

Fourth, the U.S. program must take “into consideration different conditions which may occur” in different countries.<sup>69</sup> Failure to do so may constitute “arbitrary discrimination,” according to the Appellate Body.<sup>70</sup> In that regard, the WTO might consider the relevance of developed countries’ greater historical responsibility for cumulative carbon emissions and higher current emissions per capita. In that case, there is a possibility the WTO would find that even a border adjustment applied equally to domestic and imported goods is noncompliant.

Finally, the Appellate Body’s interpretation of the chapeau requires that before imposing a border adjustment, the United States engage in “serious, across-the-board negotiations” with other nations that might be subject to the border adjustments.<sup>71</sup> Although the U.S. must make good-faith efforts to reach agreement, failure to do so will not constitute discrimination.<sup>72</sup> If the U.S. does not undertake such negotiations, or the WTO were to view the efforts as insufficiently “serious,” that might lead to a finding that the border adjustment is arbitrary and discriminatory.<sup>73</sup>

### III - THE ALTERNATIVE OF FREE ALLOCATION

Questions about the WTO legality of border adjustments, combined with concerns about tit-for-tat trade retaliation and their small impact on reducing leakage, may caution against their use. Yet, as a political economy matter, some measures may be necessary in a U.S. cap-and-trade law to address potential adverse impacts on domestic manufacturers. In response to this political imperative, some have proposed compensating adversely affected sectors in the U.S. through the free allocation of emission allowances.<sup>74</sup> While the topic of

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<sup>69</sup> U.S.—*Shrimp AB*, *supra* note 27, at para. 164.

<sup>70</sup> *Id.* at paras. 164, 165, 177.

<sup>71</sup> *Id.* at paras. 166-171.

<sup>72</sup> U.S.—*Shrimp, Article 21.5 AB*, *supra* note 27, at paras. 115-124.

<sup>73</sup> Efforts to undertake “serious, across-the-board negotiations” prior to imposition of a border adjustment may be complicated by the most recent Senate climate change bill’s reduction from eight years to two years in the delay between the start of the domestic cap-and-trade program the start of the international allowance program. Sec. 1315.

<sup>74</sup> See, e.g., Response of the Pew Center on Global Climate Change to Climate Change Legislation Design White Paper: Competitiveness Concerns/Engaging Developing Countries, available at

free versus auctioned allocation has attracted considerable attention as a policy matter, to date little attention has been given to the question whether free allocation, too, might be noncompliant with WTO law as an illegal subsidy. As discussed below, to the extent it *is* compliant, that may only be precisely for the same reasons it is *not* likely to be good policy.

Under the WTO Agreement on Subsidies and Countervailing Measures (SCM Agreement), free allocation would be a subsidy if it (1) were a “financial contribution” by the government; (2) conferred a “benefit”; and (3) was “specific” to certain industries or sectors.<sup>75</sup> If these elements are satisfied, the subsidy may be WTO-inconsistent if it also causes adverse effects to other WTO Members.<sup>76</sup>

First, free allocation of allowances should be considered a financial contribution, which is defined, among other ways, as the “direct transfer of funds, such as grants, loans and equity infusions.”<sup>77</sup> While it might be argued that free allowances do not constitute the “direct transfer of funds,” they are “functionally equivalent to distributing cash,” according to the Congressional Budget Office, because allowances can be sold for monetary value in a liquid secondary market, created and enforced by the government.<sup>78</sup> Indeed, that is why the recipients of allowances need not be the same entities regulated by the cap. In recognition of the financial value of free allowances, CBO recently scored free allocation as both a revenue increase and outlay increase. As CBO Director Peter Orszag explained, “Distributing allowances at no charge to specific firms or individuals is, in effect, equivalent to collecting revenue from an auction of the allowances and then distributing the auction proceeds to those firms or individuals.”<sup>79</sup>

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<http://www.pewclimate.org/docUploads/Pew%20Center%20on%20Competitiveness-Developing%20Countries-FINAL.pdf>.

<sup>75</sup> SCM Agreement Art 1.1, 1.2.

<sup>76</sup> SCM Agreement Art. 5. In addition to being an “actionable” subsidy if it causes adverse effects, a claim might also be made that it constitutes a “prohibited” export-contingent subsidy, which is forbidden *per se*. SCM Agreement Art. 3. While a subsidy may be prohibited if it is contingent *de facto* or *de jure* on export, Appellate Body Report, *Canada-Measures Affecting the Export of Civilian Aircraft*, WT/DS70/AB/R, 2 August 1999, at para. 167, export orientation alone is not enough; the subsidy must be “in fact tied to actual or anticipated exportation or export earnings.” SCM Agreement n. 4. Free allocation to carbon-intensive industries is unlikely to meet that test.

<sup>77</sup> SCM Agreement Art. 1.1(a)(1)(i).

<sup>78</sup> CONGRESSIONAL BUDGET OFFICE, COST ESTIMATE, S. 2191: AMERICA’S CLIMATE SECURITY ACT OF 2007 (April 10, 2008), available at [http://www.cbo.gov/ftpdocs/91xx/doc9121/s2191\\_EPW\\_Amendment.pdf](http://www.cbo.gov/ftpdocs/91xx/doc9121/s2191_EPW_Amendment.pdf).

<sup>79</sup> Peter R. Orszag, *Implications of a Cap-and-Trade Program for Carbon Dioxide Emissions*, Testimony before the Senate Finance Committee (April 24, 2008) [hereinafter “Orszag Testimony”], available at [http://www.cbo.gov/ftpdocs/91xx/doc9134/04-24-Cap\\_Trade\\_Testimony.1.1.shtml](http://www.cbo.gov/ftpdocs/91xx/doc9134/04-24-Cap_Trade_Testimony.1.1.shtml).

Second, if free allowances are a “direct transfer of funds” qualifying as a financial contribution by the government, it should be readily agreed that they also confer a benefit. “If a government gives a sum of money to a company, it seems clear that this financial contribution would generally confer a benefit.”<sup>80</sup>

Third, a subsidy is “specific” when it is provided to a specific industry or enterprise, but not when it is widely available within an economy.<sup>81</sup> To the extent free allowances are targeted at specifically-defined sectors adversely affected by a carbon price, they would likely be considered specific. On the other hand, if all allowances were distributed based on objective criteria, like historical emissions, it would be harder to prove the subsidies were specific.<sup>82</sup> Even if a subsidy is *de jure* non-specific, however, it can still be *de facto* specific if, for example, certain enterprises benefit disproportionately.<sup>83</sup>

Finally, for the program to be an “actionable” subsidy, it must cause “adverse effects” to the interests of another WTO Member.<sup>84</sup> The most likely way in which free allocation may be found to do so would be if it caused “serious prejudice”, notably because the “subsidy displaces or impedes imports of a like product of another Member in the market of the subsidizing Member.”<sup>85</sup>

Although free allocation may appear, at first glance, to harm other Members by reducing costs for domestic producers, in fact free allocation should not change a firm’s pricing and output decisions, and thus foreign firms should not see their sales reduced by artificially suppressed prices for U.S. goods. As discussed above, free allocation of allowances does *not* exempt firms from the carbon price signal created by a cap-and-trade system. Rather, it is a transfer of resources from the government to the recipients. Even if firms receive allowances for free, they will still pass along the opportunity cost of using those allowances to their customers in the form of higher prices.<sup>86</sup> Indeed, in Europe, which gave allowances away for free, consumers still saw electricity prices rise and fall with the market value of allowances, while firms reaped windfall profits. As prices increase, demand falls and

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<sup>80</sup> PETER VAN DEN BOSSCHE, *THE LAW AND POLICY OF THE WORLD TRADE ORGANIZATION* 557 (2005).

<sup>81</sup> SCM Agreement Art. 2.

<sup>82</sup> SCM Agreement n. 2.

<sup>83</sup> SCM Agreement Art. 2.1(c).

<sup>84</sup> SCM Agreement Art. 5.

<sup>85</sup> *Id.*; SCM Agreement Art. 6.3(a).

<sup>86</sup> See CONG. BUDGET OFFICE, *TRADE-OFFS IN ALLOCATING ALLOWANCES FOR CO<sub>2</sub> EMISSIONS* 1 (2007); CONG. BUDGET OFFICE, *SHIFTING THE BURDEN OF A CAP-AND-TRADE PROGRAM* (2003).



the firm's output is reduced accordingly.<sup>87</sup> How much output is reduced should not differ depending on whether allowances are auctioned or freely distributed. Firms set prices based on market forces, such as marginal costs and demand, that do not change even if firms receive a cash transfer from the government. This economic effect of free allocation is particularly important to recognize in considering how to protect U.S. industry because free allocation will increase firm profits, which ultimately accrue to shareholders, but will *not* prevent production declines and concomitant job losses in affected sectors.<sup>88</sup> Free allocation thus may not adversely affect other WTO Members or be illegal under WTO law—though precisely because it would be *ineffective* in protecting U.S. industries or workers (though it would compensate shareholders). Even if output and pricing decisions are unchanged, however, WTO Members may claim they suffered “serious prejudice” if free allocation provides firms with resources to invest in R&D or new products, prevents exit from the market, or has other indirect benefits.

It is worth noting that whether free allocation has adverse effects on importers may depend on the formula used for the allocation and updating of allowances. For example, “output-based allocation,” which some analysts have proposed,<sup>89</sup> *would* affect the pricing and output decisions of firms.<sup>90</sup> This approach would be the functional equivalent of auctioning off allowances and then using the revenue to subsidize production. Indeed, some proposals on Capitol Hill make this explicit, rebating firms in cash for the average carbon costs (from the purchase of allowances and higher electricity prices) associated with output in their sector—thus preserving some incentive to reduce energy intensity relative to the sector average. With output-based allocation or rebating, output would thus be reduced less than

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<sup>87</sup> For estimates of output reductions from a carbon charge, see Morgenstern et al., *supra* note 5.

<sup>88</sup> See, e.g., Orszag Testimony, *supra* note 79. According to Orszag, “Because the additional profits from the allowances’ value would not depend on how much a company produced, such profits would be unlikely to prevent the declines in production and resulting job losses that the price increases (and resulting drop in demand) would engender.”

<sup>89</sup> Carolyn Fischer & Alan Fox. *Output-based allocations of emissions permits: Efficiency and distributional effects in a general equilibrium setting with taxes and trade*. RFF discussion paper 04-37, Washington, DC: Resources for the Future, 2004; Carolyn Fischer, Sandra Hoffmann & Yutaka Yoshino. *Multilateral Trade Agreements and Market-Based Environmental Policies*. RFF Discussion Paper 02-28. Washington, DC: Resources for the Future, 2002. Under output-based allocation, a certain number of allowances are allocated to certain sectors, and within each sector each firm would receive a number of permits proportional to its share of the sector's output.

<sup>90</sup> In addition to the legal issues, by not allowing the carbon price signal to be passed through in the form of higher prices, output-based allocation is a less efficient way to reduce emissions since it reduces conservation incentives and instead increases reliance on lowering energy intensity. On the other hand, its proponents argue that output-based allocation would reduce leakage, mitigate adverse impacts on employment in the affected sector, and reduce negative impacts on the real wage by mitigating price increases of energy intensive goods.

would be the case absent the production subsidy—thereby giving rise to claims of “serious prejudice” by other WTO Members.<sup>91</sup> In short, the more effective free allocation is in protecting employment and output in adversely affected sectors, the more likely it may be to violate WTO law. If free allocation were found to be a WTO-inconsistent subsidy, the adversely affected WTO Member might seek the right to retaliate against U.S. products imported to that country if the free allocation were not removed.<sup>92</sup>

#### IV - CONCLUSION

As explained in this paper, the consistency of border adjustments with WTO law is in doubt and may come down to whether the WTO panel finds the measure to be a genuine effort to protect the environment or a form of stealth protectionism. The alternative of free allocation may be more WTO compliant, though only because it should not boost output from affected industries. Free allocation of allowances, however, does represent a large cash transfer to domestic firms, while doing little to reduce job loss in affected sectors. To some extent, such job loss is an inevitable consequence of reduced demand for carbon-intensive goods, which is a key purpose of a carbon price signal. Rather than benefit shareholders with free allocation, a better approach would be to auction allowances and use some of the revenue to assist workers transition, perhaps to “greener” jobs that new investment incentives will create, through a sort of “carbon price displacement assistance” program. In

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<sup>91</sup> In its defense, the U.S. might argue that output-based allocation is not a *net* subsidy once the impact of the cap-and-trade system is considered, so importers are not adversely affected relative to the business-as-usual scenario of no U.S. climate change regulation. In response, the complaining WTO Member might make two points. First, it is theoretically possible for firms to receive a net subsidy under output-based allocation if the sector-level allocations are based on historical emissions shares but a given sector or subsector does relatively more than others to reduce emissions. Second, the Member might argue that the measure being disputed as an actionable subsidy is not the U.S. climate regulation (including the allocation method), but rather output-based allocation itself. Under a cap-and-trade system, the economy as a whole would face higher costs from the domestic climate regulation, but output-based allocation would be a way to offset part of those costs for a certain subset of industries—in a way that induces higher output and thus might harm importers. In that way, exempting certain sectors from regulatory costs (and concomitant GHG reductions) that would otherwise exist may be viewed by the WTO as similar to “foregoing” revenue “otherwise due,” which is a financial contribution under Article I of the SCM Agreement. When a regulation applies to the entire economy, but only certain sectors receive a subsidy that mutes the regulation’s impact, the WTO may find that the benchmark against which to evaluate whether a Member has been adversely affected is the absence of the disputed method of allocation, not the absence of the entire regulatory program.

<sup>92</sup> SCM Agreement Art. 10-11. In addition, the affected foreign industry might consider bringing a countervailing duty case under its domestic trade laws.

addition, auction revenue can offset the distributional impact of a carbon price through progressive tax policy, reduce other distortionary taxes, and permit greater investment in environmental R&D. In short, the expected environmental benefit of border adjustments for carbon-intensive manufactured goods is likely to be quite small compared to the trade and WTO risks they pose, and any adverse impacts on employment in affected carbon-intensive industries from lack of a border adjustment can be mitigated through well-targeted use of allowance auction revenue. It is also important to point out that the costs to industry of complying with climate policy in the first place can be minimized by use of a cost-efficient market mechanism, such as a cap-and-trade system or carbon tax.

Ultimately, all the problems and challenges associated with measures to address competitiveness and leakage reinforce the truly global nature of climate change and the limited ability of any one country to address it unilaterally. International engagement is thus critical to mitigate climate change, and a new post-Kyoto international architecture will be needed in that regard.<sup>93</sup> Achieving this goal is complicated, however, by considerations of economic efficiency, which requires low-cost abatement in the developing world, and distributional equity, which demands action from rich nations historically responsible for emitting GHGs. Until a truly international approach is adopted, it is critical that the United States, at long last, show real leadership and adopt serious unilateral measures to curb GHG emissions, while high-income countries take collective steps to assist the rest of the world in reducing its emissions.

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<sup>93</sup> See generally JOSEPH E. ALDY & ROBERT N. STAVINS, ARCHITECTURES FOR AGREEMENT (2007); Todd Stern & William Antholis, *A Changing Climate: The Road Ahead for the United States*, THE WASHINGTON QUARTERLY 175-188, Winter 2007-08.