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Internalizing Externalities: An Economic and Legal Analysis of an International Carbon Tax Regime

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The nations of the world face the intersection of two global dilemmas: enhancing economic welfare and mitigating climate change. With a "point of no return" for the latter of these predicaments rapidly approaching and unilateral action on either of these problems proving minimally, if at all, effectual, the world faces a pervasive and imminent threat. However, recent international jurisprudence and global sentiment provides a single solution for each of these quandaries in the form of a carbon tax regime. Previous scholarship focused on structural deficiencies within the World Trade Organization (WTO) that prevent certainty and encourage inaction or organizational modification. However, few have considered the possibilities present within the current regime, and how using these existing structures may enable the efficacy of unilateral action vis-à-vis each of these dilemmas.

A carbon tax regime consisting of both domestic carbon taxes and border adjustments for those who fail to comply with the international efforts potentially meets the strictures under both the Kyoto Protocol to the United Nations Framework Convention on Climate Change ("Kyoto Protocol") and the WTO and creates a more efficient market. Few, if any, solutions match the efficacy of a carbon tax regime in compliance with the regulatory parameters currently permitted by a small mass of nations that serve to effect substantial climate change mitigation that conforms with international trade laws.

INTRODUCTION

National governments worldwide are joining in the pursuit of two concurrent international objectives: enhancing economic welfare by liberalizing world trade and mitigating climate change by reducing greenhouse gas emissions.[1] The two distinct multilateral efforts—

[1] *See generally* Timothy O. Randhir & Thomas W. Hertel, *Trade Liberalization as a Vehicle for Adapting to Global Warming*, 29 AGRIC. & RESOURCE ECON. REV. 159 (2000); *see also Global Trade Liberalization and the Developing Countries*, INT'L MONETARY FUND, http://www.imf.org/external/np/exr/ib/2001/110801.htm (last visited July 22, 2013) (concluding "Integration into the world economy has proven a powerful means for countries to promote economic growth, development, and poverty reduction"); *Climate, Environment, and the IMF*, INT'L MONETARY FUND, http://www.imf.org/external

administered by the WTO[2] and the Kyoto Protocol[3]—operate simultaneously and autonomously to achieve their respective goals. At the intersection of the two efforts, however, lies the potential for conflict.[4]

International trade is the exchange of capital, goods, and services across international borders or territories.[5] Throughout history, there have been numerous models for international trade; however, all models share the basic characteristic that the pattern of a nation's production can differ from the pattern of its consumption.[6] This allows any country to experience greater access to resources not endemic to its particular area, as well as a pecuniary benefit from entering the world market.[7]

When a country voluntarily complies with a domestic or international emissions abatement program, a global benefit is reached at a cost to the participating country.[8] However, an agreement that does not include the participation of all global actors always leaves open the possibility for "carbon leakage."[9] For example, one

/np/exr/facts/enviro.htm (last visited July 24, 2013) (affirming that "[designing a response] to climate change has become one of the world's foremost policy challenges").

2 The World Trade Organization is "an organization for liberalizing trade." *What is the World Trade Organization?*, WORLD TRADE ORG., http://www.wto.org/english/thewto_e/whatis_e/tif_e/fact1_e.htm (last visited Mar. 25, 2013). "The [WTO] deals with the global rules of trade between nations. Its main function is to ensure that trade flows as smoothly, predictably and freely as possible." *Id.*

3 The Kyoto Protocol is an international agreement linked to the United Nations Framework Convention on Climate Change, which commits its Parties by setting internationally binding emission reduction targets. *Kyoto Protocol*, UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE, http://unfccc.int/kyoto_protocol/items/2830.php (last visited Mar. 3, 2013) [hereinafter *Kyoto Generally*].

4 TIMOTHY E. DEAL, U.S. COUNCIL FOR INT'L BUS., WTO RULES AND PROCEDURES AND THEIR IMPLICATION FOR THE KYOTO PROTOCOL 2 (2008), *available at* http://www.uscib.org/docs/wto_and_kyoto_2008.pdf.

5 *E.g.*, *International Trade*, ENCYCLOPEDIA BRITANNICA ONLINE, http://www.britannica.com/EBchecked/topic/291349/international-trade (last visited Feb. 12, 2013).

6 Ronald W. Jones & Sugata Marjit, *International Trade Models and Real World Features*, EUROPEAN TRADE STUDY GRP., 2009, at 1, *available at* http://www.etsg.org/ETSG2007/papers/jones.pdf.

7 *Id.*

8 Claudia Kemfert, *International Games of Climate Change Policies: The Economic Effectiveness of Partial Coalition Games*, PURDUE UNIV. GLOBAL TRADE ANALYSIS PROJECT 3–4 (2001), *available at* https://www.gtap.agecon.purdue.edu/resources/download/243.pdf.

9 *See* INT'L ENERGY AGENCY, CLIMATE POLICY AND CARBON LEAKAGE: IMPACTS OF THE EUROPEAN EMISSIONS TRADING SCHEME ON ALUMINIUM 2 (2008), *available at* http://www.iea.org/publications/freepublications/publication/Aluminium_EU_ETS.pdf.

country or region may implement an incentive structure that reduces internal carbon emissions only to have the emissions relocate to a country without such regulations.[10] This fear is not lost on the WTO member nations that are both attempting to procure the benefits of international trade and voluntarily abating emissions. There is a widespread belief that pervasive international resentment over such free riding could lead to the implementation of policies that penalize a country for competitive advantages resulting from its non-adherence to collective actions aimed at mitigating anthropogenic impacts on the environment.[11]

The United States' failure to ratify the Kyoto Protocol inarguably contributed to the "clash over climate change commitments" concerning the agreement on the reduction of greenhouse gas emissions.[12] This free rider problem is endemic to political processes and has substantial implications for voluntary commitments to public good.[13] The differing measures and commitments, or lack thereof, among the world's nations for mitigating climate change and reducing emissions present significant ground for international conflict. While many nations have ratified the Kyoto Protocol and adopted regimes to combat global climate change in accordance with their legally binding commitments, others have not, creating for themselves an inherent competitive advantage.[14] In response, WTO member nations seeking to "rebalance the economic burden of shifting to a low-carbon

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[10] *Id.*

[11] A "free rider" refers to someone who benefits from resources, goods, benefits, or services without paying for the cost of the benefit. James A. Sheppard, *Productivity Loss in Performance Groups: A Motivation Analysis*, 113 PSYCHOL. BULL. 67, 69 (1993). *See* DEAL, *supra* note 4, at 2 ("The possibility of a clash over climate change commitments under the Kyoto Protocol and WTO rules arises because of the U.S. decision to abandon Kyoto. Strong resentment over this action, particularly in Europe, could lead the EU, and perhaps others, to undertake actions to penalize American and other non-Annex 1 firms for alleged competitive advantages resulting from their non-adherence to Kyoto, although the probability of such action is low at the present time."); *see also* John Hontelez, *Time to Tax the Carbon Dodgers*, BBC NEWS (Apr. 5, 2007, 10:01 AM), http://news.bbc.co.uk/2/hi/6524331.stm ("These countries [which haven't ratified the Kyoto Protocol and don't impose a 'carbon charge' on their exports] unfairly favour their own goods and discriminate against nations that do apply such a charge, as the European Union is doing with its Emissions Trading Scheme, and some of its members with carbon taxes.").

[12] *See* DEAL, *supra* note 4, at 2.

[13] Thomas R. Palfrey & Howard Rosenthal, *Testing Game-Theoretic Models of Free Riding: New Evidence of Probability Bias and Learning*, 1 (Mass. Inst. of Tech., Working Paper No. 549, 1990), *available at* http://dspace.mit.edu/bitstream/handle/1721.1/64219/testinggametheor00palf.pdf?sequence=1.

[14] *See* DEAL, *supra* note 4, at 2.

society" have looked to international trade law to even the playing field.[15]

Anthropogenic climate change is a widely recognized global problem.[16] According to the International Energy Agency, trends indicate that "delaying action is a false economy"[17] and cost of taking measures to combat climate change now is much less expensive than waiting until 2020 or 2030.[18] Both from an economic and a sociological perspective, experts agree that the time for action on this issue is now. The impetuses behind this Article are to consider and embrace the validity of a carbon tax regime vis-à-vis international trade law, and to solve the collective action problem that underlies action in response to global climate change.

This Article first will discuss why carbon taxation, as part of a tax regime composed of both carbon taxes and border adjustments, is a viable solution for reducing carbon dioxide emissions and mitigating climate change. It will then explore the necessity for border adjustments as a supplement to carbon taxation as a means to conserve an exhaustible natural resource. Border adjustments additionally reduce the loss of competitiveness suffered by domestic industries and producers in relation to their international competitors not subject to similar tax obligations. Moreover, this Article discusses the implications of such proposed measures on the Kyoto Protocol and the WTO, thoroughly analyzing the relevant provisions of the General Agreement on Tariffs and Trade, as well as the considerable uncertainty that surrounds the topic due to the lack of jurisprudence on border adjustments. Finally, in a world ever-nearing the precarious "point of no return" amid discussion of topics where "certainty is impossible," this Article addresses the viability of a solution that

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15 *See, e.g.*, Hontelez, *supra* note 11.

16 *Global Warming Seen as a Major Problem Around the World Less Concern in the U.S., China and Russia*, PEW RES. (Dec. 2, 2009), http://www.pewglobal.org/2009/12/02/global-warming-seen-as-a-major-problem-around-the-world-less-concern-in-the-us-china-and-russia/; *see also* Kristin Eberhard, *New Poll: Americans Believe Global Warming is Real and Threatens Their Families*, SWITCHBOARD NAT. RESOURCES DEF. COUNCIL STAFF BLOG (Oct. 24, 2012), http://switchboard.nrdc.org/blogs/kgrenfell/new_poll_americans_believe_glo.html.

17 Brad Plumer, *When Do We Hit the Point of No Return for Climate Change?*, WASH. POST (Nov. 10, 2011, 10:36 AM), http://www.washingtonpost.com/blogs/wonkblog/post/when-do-we-hit-the-point-of-no-return-for-climate-change/2011/11/10/gIQA4rri8M_blog.html.

18 *Id.*; NICHOLAS STERN, STERN REVIEW: THE ECONOMICS OF CLIMATE CHANGE 1 (2006).

comports with the strictures of both international trade law and climate commitments and implores its implementation.[19]

I
HISTORY, BACKGROUND, AND THE INTERCONNECTEDNESS OF THE GLOBAL TRADE REGIME WITH CLIMATE CHANGE MITIGATION POLICY

A. The Kyoto Protocol

In December 1997, 160 developed and developing countries adopted the Kyoto Protocol, an international agreement that set binding targets for reducing greenhouse gas emissions.[20] Parties originally committed to reduce emissions to an average of five percent below 1990 levels.[21] Although the first commitment period ended in 2012, the United Nations Framework Convention on Climate Change reconvened in December 2012 to adopt the "Doha Amendment to the Kyoto Protocol," which creates a new commitment period for the current 192 Parties to the Kyoto Protocol.[22] During the second commitment period, from 2013 to 2020, Parties have committed to reduce emissions by at least eighteen percent below 1990 levels.[23]

The Kyoto Protocol offers Parties considerable flexibility in meeting their prescribed emissions commitments.[24] Countries with commitments under the Kyoto Protocol to limit or reduce emissions must meet their targets primarily through national measures.[25] As an additional means of meeting these targets, the Kyoto Protocol

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19 AARON COSBEY & RICHARD TARASOFSKY, CHATHAM HOUSE, CLIMATE CHANGE, COMPETITIVENESS AND TRADE 20 (2007), *available at* http://www.iisd.org/pdf/2007/climate_trade_competitive.pdf.

20 *See Kyoto Generally*, *supra* note 3.

21 *Kyoto Protocol to the United Nations Framework Convention on Climate Change*, UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE, at art. 3, *available at* http://unfccc.int/essential_background/kyoto_protocol/items/1678.php (last visited July 20, 2013) [hereinafter *Kyoto Protocol*].

22 John M. Broder, *Climate Talks Yield Commitment to Ambitious, but Unclear, Actions*, N.Y. TIMES (Dec. 8, 2012), http://www.nytimes.com/2012/12/09/science/earth/talks-on-climate-produce-promises-and-complaints.html; *Status of Ratification of the Kyoto Protocol*, UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE, http://unfccc.int/kyoto_protocol/status_of_ratification/items/2613.php (last visited July 20, 2013).

23 *Kyoto Generally*, *supra* note 3.

24 DEAL, *supra* note 4, at 2.

25 *Kyoto Generally*, *supra* note 3.

introduced three market-based mechanisms, thereby creating what is known as "the carbon market."[26] Consequently, Parties may consider the implementation of carbon taxes, excise taxes based on carbon content, and emissions as central components to broader national efforts to reduce carbon emissions.[27] According to the Kyoto Protocol, Parties should strive for a "progressive reduction or phasing out of market imperfections . . . in all greenhouse gas emitting sectors that run counter to the [Protocol's] objective."[28]

B. World Trade Organization

The World Trade Organization is an international organization that governs the global rules of trade among nations.[29] Its goal is to help producers of goods and services, exporters, and importers to conduct their business "while allowing governments to meet social and environmental objectives."[30] The WTO agreements, negotiated and signed by the Organization's 153 members, function as contracts whose purpose is to provide "legal ground rules for international commerce . . . binding governments to keep their trade policies within agreed limits."[31] The WTO's main objective is to maintain the free and open flow of trade, and its General Agreements on Tariffs and Trade (GATT) provide the "underpinnings to the global trading system."[32] The fundamental principles of the WTO system are the "most favored nation" principle,[33] the "national treatment"

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[26] UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE, FACT SHEET: THE KYOTO PROTOCOL 1 (2011), *available at* http://unfccc.int/files/press/backgrounders/application/pdf/fact_sheet_the_kyoto_protocol.pdf; *Kyoto Generally*, *supra* note 3.

[27] Lucas Assunção & ZhongXiang Zhang, *Domestic Climate Change Policies and the WTO* 2 (United Nations Conference on Trade and Dev., Discussion Paper No. 164, 2002), *available at* http://unctad.org/EN/DOCS/OSGDP164_EN.pdf.

[28] *Kyoto Protocol*, *supra* note 21, at art. 2.

[29] *The WTO in Brief*, WORLD TRADE ORG., http://www.wto.org/english/thewto_e/whatis_e/inbrief_e/inbr00_e.htm (last visited Sept. 13, 2010).

[30] WORLD TRADE ORG., UNDERSTANDING THE WTO 2 (2010), *available at* http://www.wto.org/english/res_e/booksp_e/anrep_e/anrep10_chap1_e.pdf.

[31] *Id*. at 2, 6.

[32] Lawrence L. Herman, *Energy Trade, Carbon Emissions and the WTO*, 2 J. WORLD ENERGY L. & BUS. 196, 196–97 (2009) ("Without [GATT], the ordered processes of international commerce, including trade in energy goods and services, would be at risk.").

[33] Cinnamon Carlarne, *The Kyoto Protocol and the WTO: Reconciling Tensions Between Free Trade and Environmental Objectives*, 17 COLO. J. INT'L ENVTL. L. & POL'Y 45, 60 (2006). This is the nondiscrimination between like products from different nations. *General Agreement on Tariffs and Trade*, Oct. 30, 1947, 61 Stat. A-11, 55 U.N.T.S. 194, at art. I [hereinafter GATT].

principle,[34] and the elimination of quantitative restrictions on trade.[35] "Without [these] rules, the ordered processes of international commerce, including trade in energy goods and services, would be at risk."[36]

C. Relationship between the Kyoto Protocol and the World Trade Organization

The international community shares joint interests in enhancing economic wellbeing through promoting world trade and mitigating global climate change via the reduction of greenhouse gases. To further those joint interests, the international community has supported two distinct multilateral efforts: the Kyoto Protocol and the WTO. However, the implementation of various proposals to reduce greenhouse gas emissions in accordance with the Kyoto Protocol may impede international trade, thereby potentially violating the WTO's rules governing world trade.[37]

Article II of the Kyoto Protocol urges Parties to implement their policies and measures "in such a way as to minimize adverse effects . . . on international trade."[38] The relationship between the Kyoto Protocol and the WTO becomes "increasingly pertinent as proposals percolate to the surface" that implement border adjustments in conjunction with other market mechanisms designed to mitigate climate change.[39] Part II addresses and resolves the potential regulatory conflicts between a carbon tax regime under the Kyoto Protocol and the rules of international trade provided by the WTO under GATT.

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[34] The "national treatment" principle is "nondiscrimination between imported products and like domestic products." Carlarne, *supra* note 33, at 60.

[35] *Id.*

[36] Herman, *supra* note 32, at 196.

[37] The Woodrow Wilson International Center for Scholars illustrates an example of how WTO/GATT trade provisos may create a conflict between trade rules and environmental measures: a semiconductor produced with ozone-depleting substances would be banned in accordance with the Montreal Protocol. However, the "like" product provision of GATT Article III likely would invalidate the trade discrimination based on the use of ozone-depleting substances. WILLIAM KRIST, WOODROW WILSON INT'L CTR. FOR SCHOLARS, THE WTO AND MEAS: TIME FOR A GOOD NEIGHBOR POLICY (2002), *available at* http://www.wilsoncenter.org/publication/the-wto-and-meas-time-for-good-neighbor-policy.

[38] Kyoto Protocol, *supra* note 21, at art. 2.

[39] Herman, *supra* note 32, at 196.

II
MEETING THE KYOTO PROTOCOL'S OBJECTIVE OF REMEDYING "MARKET IMPERFECTIONS" THROUGH A CARBON TAX REGIME

A. Carbon Taxation

"Economists of nearly all methodological and ideological stripes concur that the best way . . . to stave off the worst impacts of climate change is through some form of taxation on the carbon content of fossil fuels."[40] Generally, market prices for carbon-based fuels and products or services that require the use of such fuels do not reflect the full social and environmental costs of their production and consumption.[41] In economics, the term "externality" represents the additional cost or benefit that results from an activity or transaction and that affects an otherwise uninvolved party who did not choose to incur that cost or benefit.[42] Because externalities are oftentimes pushed from the transaction onto the public at large, they form an inefficient market.[43] Carbon taxes curb emissions by incorporating the negative externalities of fossil fuels and increasing the price of fuels with higher carbon contents, thereby internalizing the costs of the former externality and reducing demand for carbon-based fuels.[44]

Putting a price on carbon provides the appropriate market incentives to reduce carbon emissions.[45] A tax structure based on carbon content would increase the cost of producing energy from fossil fuels, which would encourage market participants to reduce

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40 Barry Rabe, *The Political Viability of Carbon Taxation*, BROOKINGS INST. (Dec. 5, 2012, 12:00 AM), http://www.brookings.edu/blogs/up-front/posts/2012/12/05-carbon-tax-rabe.

41 Steve Waygood, *How Do the Capital Markets Undermine Sustainable Development? What Can Be Done to Correct This?*, 1 J. SUSTAINABLE FIN. & INVESTMENT 81, 83 (2011), *available at* http://www.tandfonline.com/doi/pdf/10.3763/jsfi.2010.0008.

42 *See* James M. Buchanan & Wm. Craig Stubblebine, *Externality*, 29 Economica 371 (1962).

43 Thomas Helbling, *Externalities: Prices Do Not Capture All Costs*, INT'L MONETARY FUND, http://www.imf.org/external/pubs/ft/fandd/basics/external.htm (last updated Mar. 28, 2012).

44 *See Carbon Taxes*, PARLIAMENT OF AUSTL., http://www.aph.gov.au/About_Parliament/Parliamentary_Departments/Parliamentary_Library/Browse_by_Topic/ClimateChange/responses/economic/carbontax (last updated Nov. 19, 2010); Bjorn Lomborg, *Carbon Tax a Costly Feel-Good Gesture that Won't Reduce Emissions*, AUSTRALIAN (Nov. 17 2011, 12:00 AM), http://www.theaustralian.com.au/national-affairs/opinion/carbon-tax-a-costly-feel-good-gesture-that-wont-reduce-emissions/story-e6frgd0x-1226197203654.

45 KENNETH P. GREEN ET AL., CLIMATE CHANGE: CAPS VS. TAXES 5 (2d ed. 2007).

their consumption of such energy and create the appropriate incentives for more efficient energy use.[46] The tax would create further incentives to reduce the use of carbon-intensive energy by flowing through the cost to consumer products; as a result, consumers would economize in consumption and manufacturers would become more efficient in order to increase profits.[47]

Carbon taxes provide price stabilization while allowing for adjustability, market certainty, and predictability.[48] Because most carbon taxes are included in the overall price of energy, the portion of energy cost per unit that stems from fluctuations in market rates for fossil fuels would shrink as a percentage of the whole.[49] That shrinkage makes the price of a given form of energy less volatile in calculating production costs, while increasing investor and consumer confidence.[50] Moreover, a carbon tax regime would have the flexibility to strain or relax the carbon levy subject to current market conditions.[51] By these mechanisms, carbon taxes would enable countries to regularly monitor and assess energy consumption and make appropriate adjustments to maintain predictability and certainty within the market.

The structure of a carbon tax regime makes it the superior choice among alternatives allowed under the Kyoto Protocol. Carbon taxes function as an excise tax based on the carbon content of fuel and would be imposed on market participants for each ton of carbon dioxide emitted into the atmosphere.[52] Many economists view a revenue-neutral carbon tax regime as a superior policy alternative for reducing greenhouse gas emissions because "a carbon tax equal to the damage per ton of CO_2 will lead to exactly the right balance between

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46 *Id*. at 6.

47 *Id*. at 5–6.

48 *Id*. at 6; *Vs. Cap-Trade*, CARBON TAX CTR., http://www.carbontax.org/issues/carbon-taxes-vs-cap-and-trade (last updated Mar. 22, 2011).

49 GREEN ET AL., *supra* note 45, at 6.

50 *Id.*; Shelly K. Schwartz, *Oil-Price Volatility Bedevils Business and Consumers*, CNBC.COM (June 11, 2011, 10:00 AM), http://www.cnbc.com/id/43138643; Mark Kukis, *Consumer Confidence: A Key Recession Signal*, TIME (Oct. 6, 2008), http://www.time.com/time/business/article/0,8599,1847792,00.html.

51 If the tax was too stringent, it could easily be relaxed over a period to allow markets to react with certainty. Likewise, if the tax was too relaxed to actually produce results, it could similarly be increased to incentivize greater reduction of carbon emissions. GREEN ET AL., *supra* note 45, at 6.

52 *See* Brad Plumer, *How Would a Carbon Tax Work? Let's Ask British Columbia.*, WASH. POST (Sept. 19, 2012, 10:49 AM), http://www.washingtonpost.com/blogs/wonkblog/wp/2012/09/19/how-would-a-carbon-tax-work-lets-ask-british-columbia/.

the cost of reducing emissions and the resulting benefits of less global warming."[53] Research also shows that the efficacy of such a carbon-pricing mechanism produces net gains five times higher than even the best designed quantity-control regime, such as a cap-and-trade system.[54] Moreover, revenue collected from carbon taxes would remain within the sovereign's control, so nations could maintain independence and retain revenues within the individual sovereign state.[55] Such a policy would remove a country's incentives for cheating or insincere participation in carbon-reduction programs.[56] Countries could use their preexisting tax collection mechanisms and institutions, with extensive experience in enforcing compliance, to make it difficult for market participants to manipulate the system or avoid carbon taxes.[57]

Furthermore, carbon taxation lends itself to the concept of a double-dividend, where the tax is paired with a reduction of other taxes in a way that improves the overall efficiency of the implementing nation's economy.[58] The first dividend is the actual reduction of the adverse environmental externality.[59] The second dividend is the improvement in economic efficiency from the use of environmental tax revenues to reduce other taxes, such as income taxes that distort labor supply and saving decisions.[60] In this respect, carbon taxes "can produce a far more equitable result than cap-and-trade" systems through either the double dividend concept or "progressive tax-shifting to reduce regressive payroll or sales taxes."[61] As the American Enterprise Institute for Public Policy Research asserts, "[c]riticisms notwithstanding, logic suggests that the pursuit of a strong double dividend is desirable as a matter of public policy. . . . [I]f aggressive actions are to be taken to control GHG

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53 WILLIAM PIZER, RES. FOR THE FUTURE, CHOOSING PRICE OR QUANTITY CONTROLS FOR GREENHOUSE GASES 6–7 (1999), *available at* http://www.rff.org/rff/Documents/RFF-CCIB-17.pdf; *see also* GREEN ET AL., *supra* note 45, at 4.

54 *See* GREEN ET AL., *supra* note 45, at 4; PIZER, *supra* note 53, at 6.

55 GREEN ET AL., *supra* note 45, at 6.

56 *Id.* at 10.

57 *Id.*

58 *Id.*

59 *Id.*

60 *Id.*

61 *Vs. Cap-Trade*, *supra* note 48.

emissions, carbon-centered tax reform . . . is the superior policy option."[62]

Several countries have successfully adopted carbon taxes as a central component of their efforts to reduce emissions.[63] Carbon-pricing schemes are expected to have jurisdiction in at least thirty-three countries and eighteen sub-national jurisdictions by the end of 2013.[64] Denmark used revenue generated from its carbon taxes to concurrently finance energy efficiency investments that reduced its emissions by four percent between 1992 and 2000.[65] In 1990, Finland implemented a carbon tax and reduced its emissions seven percent by 1998.[66] Similarly, Sweden reduced its carbon emissions by roughly twenty percent between 1991 and 2000.[67] The success of carbon tax programs abroad only increases the practicability of implementing such regimes elsewhere as the most efficient means of complying with their emission commitments.

While carbon taxes offer an effective means of complying with the Kyoto Protocol, they also have significant implications for international trade.[68] In the absence of an internationally uniform tax, the imposition of a carbon tax in any particular country or region will lead to less economically competitive domestic industries when compared to foreign competitors not subject to taxation.[69] For instance, domestic producers would bear the burden of increased energy taxes that would increase their production costs, while foreign producers would incur no additional costs. The consequences of such

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62 GREEN ET AL., *supra* note 45, at 10–11.

63 TIM FLANNERY ET AL., CLIMATE COMM'N, THE CRITICAL DECADE: INTERNATIONAL ACTION ON CLIMATE CHANGE 32–45 (2012), *available at* http://climatecommission.gov.au/wp-content/uploads/climatecommission_internationalReport_20120821.pdf.

64 *Id.* at 35.

65 DUNCAN BRACK ET AL., INTERNATIONAL TRADE AND CLIMATE CHANGE POLICIES 64 (2000).

66 LESTER R. BROWN, PLAN B: RESCUING A PLANET UNDER STRESS AND A CIVILIZATION IN TROUBLE 243 (2003), *available at* http://www.earth-policy.org/images/uploads/book_files/EPRPart3.pdf.

67 BENGT JOHANSSON, SWED. ENVTL. PROT. AGENCY, ECONOMIC INSTRUMENTS IN PRACTICE 1: CARBON TAX IN SWEDEN 8 (1997), *available at* http://www.oecd.org/science/inno/2108273.pdf.

68 *See, e.g.*, Jean Chemnick, *Economists Slice, Dice Carbon Tax at Forum*, E&E PUBL'G (Feb. 28, 2013), http://eenews.net/public/Greenwire/2013/02/28/4.

69 *See generally* Stacey Schultz, *British Columbia Rethinks its Pioneering Carbon Tax*, NAT'L GEOGRAPHIC (May 3, 2012), http://news.nationalgeographic.com/news/energy/2012/05/120503-british-columbia-reviews-carbon-tax/.

asymmetry would be especially severe for energy-intensive sectors.[70] In those sectors, energy prices comprise a significant share of total production costs, making them particularly vulnerable to the competitive disadvantage of a carbon tax and thus likely to resist the implementation of such taxes.[71] Accordingly, in the 1990s, carbon tax proposals in the United States, the European Union, and Australia failed largely because of opposition from the energy-intensive sectors and other business interests that feared losing their international competitiveness. Because of such opposition, no national government would be able to implement a carbon tax without offering concurrent measures to lessen the burden on the energy-intensive sectors.[72]

The presence of international trade also threatens the environmental objectives of the tax. In the absence of countervailing measures, reductions in domestic carbon emissions may simply be offset by carbon leakage.[73] Thus, national governments must design carbon tax policies that address both the economic and the environmental consequences of international trade. Because such measures may disrupt trade flows, these offsetting policies constitute the central point of tension between the goals of the Kyoto Protocol and the rules of the WTO.

To counterbalance the economic burden of a carbon tax, national governments have three primary options. Governments may resolve to neutralize the burden by exempting the energy-intensive sectors; however, such actions diminish the efficacy of the tax by limiting the incentive among the market participants that pollute the most.[74]

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[70] "Anyone writing a carbon tax would have to make many design decisions, including how and whether to protect trade-exposed, energy-intensive industries from being placed at a competitive disadvantage relative to foreign competitors." *See* Chemnick, *supra* note 68.

[71] JAMES BARRETT, CIVIL SOC'Y INST., EMPLOYMENT IMPACTS OF CLIMATE CHANGE 10–11, *available at* http://www.civilsocietyinstitute.org/reports/GEGWS-BarrettChapter.pdf.

[72] J. Andrew Hoerner & Frank Muller, *Carbon Taxes for Climate Protection in a Competitive World* 12–14 (Swiss Fed. Office for Foreign Econ, Affairs, 1996), *available at* rprogress.org/publications/1996/swiss_1996.pdf.

[73] Carbon leakage occurs when there is an increase in carbon dioxide emissions in one country as a result of an emissions reduction by a second country with a strict climate policy. *See* INT'L ENERGY AGENCY, *supra* note 9, at 10.

[74] David Rich, Climate Change, Carbon Taxes, and International Trade: An Analysis of the Emerging Conflict between the Kyoto Protocol and the WTO, at 5 (Dec. 9, 2004) (unpublished paper for Environmental Economics and Policy 131, University of California at Berkley), *available at* http://are.berkeley.edu/courses/EEP131/fall2006/NotableStudent04/ClimateChangeRich.pdf.

Alternatively, governments may use the tax revenue acquired to lower other taxes or to provide refunds to corporations in order to ease the burden on adversely affected sectors.[75] While revenue recycling is preferable to exemptions because it maintains the incentive to reduce emissions, it may be inefficient and firms may still incur a loss of competitiveness under such a plan. Therefore, the most effective way to maintain international competitiveness without compromising the efficacy of the tax is to adjust the taxes of energy-intensive goods at the border.[76] A border adjustment consists of imposing carbon taxes on imports at the domestic rate in order to maintain competitiveness domestically while relieving exports of taxation, allowing them to compete untaxed in international markets.[77] "By removing the asymmetry between foreign and domestic producers, [border adjustments] offer a solution to the loss of competitiveness arising from carbon taxes."[78] However, because these taxes serve as possible barriers to trade, they also present a potential conflict with WTO rules.[79]

B. Border Adjustments

Border adjustments have the potential to serve as a remedy for conflicting tax regimes between trading nations. In recognition of the potential for border adjustments to harmonize differing tax regimes as well as their anticipated conflicts with WTO law, the international economic community formed the Working Party on Border Tax Adjustments ("Working Party") in 1968.[80] The Working Party was charged with examining the GATT provisions relevant to border adjustments, the practices of contracting parties to border adjustments, and the possible effects of such adjustments on international trade, before reporting its findings and recommendations

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[75] *See id.* at 6; William G. Gale et al., *Carbon Taxes as Part of the Fiscal Solution*, BROOKINGS INST., at III.C. (Mar. 12, 2013), http://www.brookings.edu/research/papers/2013/03/12-carbon-tax-gale.

[76] Rich, *supra* note 74, at 6.

[77] *Id.*

[78] *Id.*

[79] *Id.* All WTO members must undergo periodic scrutiny of their trade policies and practices to ensure they do not impose an unfair barrier to trade. *See Understanding the WTO*, *supra* note 30.

[80] WORLD TRADE ORG., REPORT BY THE WORKING PARTY ON BORDER TAX ADJUSTMENTS ¶ 4 (1970) [hereinafter GATT Working Party], *available at* http://www.wto.org/gatt_docs/English/SULPDF/90840088.pdf.

to the WTO General Council.[81] In its examination, the Working Party adopted the definition of "border adjustment" created by the Organization for Economic Co-operation and Development (OECD):

> [A]ny fiscal measures which put into effect, in whole or in part, the destination principle (i.e. which enable exported products to be relieved of some or all of the tax charged in the exporting country in respect of similar domestic products sold to consumers on the home market and which enable imported products sold to consumers to be charged with some or all of the tax charged in the importing country in respect of similar domestic products).[82]

While the Working Party found border adjustments applied to imports that are "like" the domestic, locally taxed products permissible,[83] it offered little guidance as to whether imported products produced from carbon-emitting Processes and Production Methods (PPMs)[84] were eligible for border adjustments.[85]

Border adjustments could serve as "a justifiable threat to irresponsible governments . . . , which refuse to implement Kyoto."[86] Ideally, they would apply to both imports and exports entering into international trade, enabling nations to offset the economic burdens associated with carbon taxes when trading countries vary in their tax regimes.[87] Nations could tax imports from non-carbon-taxing countries based on their carbon content.[88] This would enable

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[81] *Id*. ¶ 1.

[82] *Id*. ¶ 4 (internal quotation marks omitted).

[83] *Id*.

[84] A process and production method is the way in which a product is made. Many products go through a number of stages, and therefore a number of PPMs, before they are ready for market. For example, making paper requires trees to be grown and harvested, the wood to be processed, the pulp often to be bleached, and so on. The various processes will have different sorts of environmental impacts—on biodiversity, on forest-based streams and wildlife, on human health from chemical pollution of waterways, or in terms of air pollution and energy use. Other paper may be made from post-consumer waste, a different process involving a different set of environmental impacts.

INT'L INST. FOR SUSTAINABLE DEV., ENVIRONMENT AND TRADE: A HANDBOOK 53 (2d ed. 2005), *available at* http://www.iisd.org/trade/handbook/5_1.htm.

[85] Herman, *supra* note 32, at 206; *see also* Steve Charnovitz, *The Law of Environmental "PPMs" in the WTO: Debunking the Myth of Illegality*, 27 YALE J. INT'L L. 59, 59–60 (2002).

[86] Hontelez, *supra* note 11.

[87] GATT Working Party, *supra* note 80, ¶ 5.

[88] Daniel McNamee, *Climate Change, the Kyoto Protocol, and the World Trade Organization: Challenges and Conflicts*, 6 SUSTAINABLE DEV. L. & POL'Y 41, 41–42 (2006).

countries to "rectify domestic price differentials by taxing imported products at the same level as those produced domestically."[89] For exports, nations could offer rebates for carbon taxes paid by taxed producers for goods exported to other countries with carbon taxes.[90] Countries would be able to refund the carbon taxes paid by their domestic producers for exported goods in order to prevent the double taxation of domestic producers by both the domestic state as well as the importing state.[91]

Although carbon taxes coupled with border adjustments present a viable solution for reducing emissions, the unilateral adoption of such a regime "may well raise complex questions with respect to the WTO consistency and the conditions under which border taxes can be adjusted to accommodate a loss of international competitiveness."[92] These questions arise because such a tax regime may be considered a barrier to trade, and therefore present a potential conflict with the rules of the WTO.[93]

III
THE GATT-LEGALITY OF BORDER ADJUSTMENTS

A. The Uncertainty and Lack of WTO Jurisprudence Surrounding Border Adjustments

Considerable uncertainty surrounds the interpretation of WTO trade rules as they apply to border adjustments. While border adjustments on direct taxes[94] are categorically impermissible under GATT, they may be permitted in some circumstances for certain types

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89 *Id.* at 42.

90 Joshua Elliott et al., *Trade and Carbon Taxes*, 100 AM. ECON. REV. 465, 465 (2010), *available at* http://home.uchicago.edu/~kortum/papers/AERpp_final.pdf.

91 Comm. of Experts on Int'l Cooperation in Tax Matters, *Tax Cooperation on Climate Change* 13–15, U.N. Doc. E/c.18/2010/CRP.12 (2010), *available at* http://www.un.org/esa/ffd/tax/sixthsession/CRP12_Draft.pdf.

92 *See* DEAL, *supra* note 4, at 2 (quoting Assunção & XiangZhang *supra* note 27, at 3) (internal quotation marks omitted).

93 All WTO members must undergo periodic scrutiny of their trade policies and practices to ensure they do not impose an unfair barrier to trade. *See* UNDERSTANDING THE WTO, *supra* note 30.

94 "Direct taxes are primarily taxes on natural persons (e.g., individuals), and they are typically based on the taxpayer's ability to pay as measured by income, consumption, or net wealth." *Taxation*, ENCYCLOPEDIA BRITANNICA ONLINE, http://www.britannica.com/EBchecked/topic/584578/taxation (last visited Feb. 12, 2013).

of indirect taxes.[95] At the time of the drafting of GATT in the mid-1940s, little consideration was paid to the interaction of GATT with market-based measures aimed at mitigating climate change and environmental damage.[96] In fact, the rules on border adjustments were "developed primarily with the goals of competitiveness and absence of protectionism in mind."[97] Further, "[t]hey were not developed with environmental taxes in mind."[98] Consequently, environmentally driven market-based measures like carbon tax border adjustments do not easily fit into the rules and exceptions established by international trade law, and a tremendous lack of clarity surrounds the interpretation of GATT rules as applied to indirect taxes like border adjustments.[99]

To contribute to the existing muddiness and doubt surrounding GATT-legality of border adjustments on carbon taxes, WTO law does not recognize the doctrine of *stare decisis*.[100] Accordingly, the WTO's dispute settlement bodies (DSBs) are not bound by precedent, further complicating this analysis.[101] In the absence of the *stare decisis* doctrine, it is difficult—if not impossible—to predict with any certainty how the WTO may rule on any given issue.

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[95] Charles E. McClure, Jr., *The GATT-Legality of Border Adjustments for Carbon Taxes and the Cost of Emissions Permits: A Riddle, Wrapped in a Mystery, Inside an Enigma*, 11 FLA. TAX REV. 221, 236 (2011). "Indirect taxes are levied on the production or consumption of goods and services or on transactions, including imports and exports. Examples include general and selective sales taxes, value-added taxes (VAT), taxes on any aspect of manufacturing or production, taxes on legal transactions, and customs or import duties." *Indirect Taxes*, ENCYCLOPEDIA BRITANNICA ONLINE, http://www.britannica.com/EBchecked/topic/584578/taxation/72005/Indirect-taxes (last visited Feb. 12, 2013).

[96] *See* McClure, *supra* note 95, at 236.

[97] Paul Demaret & Raoul Stewardson, *Border Tax Adjustments under GATT and EC Law and General Implications for Environmental Taxes*, 28 J. WORLD TRADE 5, 61 (1994).

[98] *Id*. at 61–62.

[99] McClure, *supra* note 95, at 236.

[100] "As in other areas of international law, there is no rule of *stare decisis* in WTO dispute settlement." *Legal Effect of Panel and Appellate Body Reports and DSB Recommendations and Rulings*, WORLD TRADE ORG., http://www.wto.org/english/tratop_e/dispu_e/disp_settlement_cbt_e/c7s2p1_e.htm (last visited Apr. 14, 2012).

> This means that a panel is not obliged to follow previous Appellate Body reports even if they have developed a certain interpretation of exactly the provisions which are now at issue before the panel. Nor is the Appellate Body obliged to maintain the legal interpretations it has developed in past cases.

Id.

[101] *Id*.

Despite its inability to bind its DSBs to precedent, some solace may be found in the fact that

> [i]f the reasoning developed in the previous report in support of the interpretation given to a WTO rule is persuasive from the perspective of the panel or the Appellate Body in the subsequent case, it is very likely that the panel or the Appellate Body will repeat and follow it.[102]

While this does not openly insinuate the principle of precedent, the qualification of "very likely" does suggest that previous reports are good indicators of the likely outcomes of similar disputes.

> This is also in line with a key objective of the dispute settlement system which is to enhance the security and predictability of the multilateral trading system. . . . In the words of the Appellate Body, these GATT and WTO panel reports—and equally adopted Appellate Body reports—"create legitimate expectations among WTO Members, and, therefore, should be taken into account where they are relevant to any dispute."[103]

Due to the enormity of uncertainty surrounding GATT-legality of border adjustments, it is imperative to thoroughly explore the relevant provisions of the WTO and GATT to predict how the WTO may adjudicate the matter.

B. The Potential Application of GATT Provisions to Border Adjustments

Generally, WTO and GATT rules aim to ensure non-discriminatory measures and prevent disguised protectionism efforts by nations.[104] When a nation's proposed measures violate the relevant provisions set forth by WTO and GATT, the nation may seek to argue for the measure's legality under GATT Article XX, which provides for general exceptions.[105] Article XX of GATT allows for preferential measures that may violate other GATT provisions under very narrow exceptions, and only when the treatment is not arbitrary or discriminatory.[106] Therefore, determining the legality of border adjustments for carbon taxes requires a two-tier analysis. First, whether the border adjustments can satisfy the relevant controlling GATT provisions, namely Articles I and III. Second, if they cannot,

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102 *Id*.

103 *Id*.

104 Herman, *supra* note 32, at 200.

105 GATT, *supra* note 33, at art. III(2).

106 *Id*. at art. XX.

then whether carbon tax border adjustments may qualify for an Article XX exception.

1. Border Adjustments Under GATT Articles I and III

Because border adjustments may impede international trade in their efforts to neutralize the loss of competitiveness suffered by domestic industries of carbon taxing nations, GATT Articles I and III likely pose the greatest obstacles to the legality of such equalizing provisions.[107]

GATT Article III contains the "national treatment" clause, which states in relevant part: "[t]he products of the territory of any contracting party imported into the territory of any other contracting party shall not be subject, directly or indirectly, to internal taxes or other internal charges of any kind in excess of those applied, directly or indirectly, to like domestic products."[108] The national treatment requirement, therefore, mandates that nations treat imported products no less favorably than "like" domestic products.

Herein lies an important WTO distinction regarding the legality of border adjustments on carbon taxes: product taxes versus process taxes. Product taxes, or taxes on a final product, are generally accepted as legal under GATT.[109] For example, a country may permissibly impose a domestic tax or border adjustment on imported gasoline because the gasoline constitutes a final product. Nations may impose restrictions on such imports as long as such restrictions are comparable to those imposed on domestic goods with respect to their physical characteristics and performance.[110] In contrast, process taxes, or taxes on production inputs including land, labor, and raw materials, are highly controversial and their legality is less certain.[111] Nations likely would violate the national treatment clause if they sought to impose restrictions on how a product was made if those production methods did not affect the product's performance or characteristics.[112]

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107 DEAL, *supra* note 4, at 5.

108 GATT, *supra* note 33, at art. III(2).

109 DAVID W. PEARCE, BLUEPRINT 4: CAPTURING GLOBAL ENVIRONMENTAL VALUE 95 (1995).

110 DEAL, *supra* note 4, at 5.

111 *Id.*

112 *Id.*

WTO law further distinguishes taxing inputs that remain physical components of the final product and inputs that are not incorporated into the final product from taxing products based on their PPM.[113] Generally, GATT rules permit border adjustments on inputs that remain physical components of the final product. However, no WTO dispute panel has yet ruled on the legality of taxing inputs that are not incorporated into the final product. As a result, nations bidding to implement border adjustments for carbon taxes (which are based on the energy consumed in the production of a product) must resort to searching WTO case law and investigating legislative history for further guidance. Even then, it cannot be said with certainty how the WTO would rule on the matter.

In the *Superfund* case,[114] the WTO dispute panel upheld a U.S. tax on imported chemicals based on the amount of feedstock chemicals created during production, a process-based border adjustment.[115] It upheld the border adjustment on the basis that it "corresponded to an internal United States tax on the same chemicals from which the imported substances were derived."[116] While this holding would seemingly support GATT-legality of border adjustments for carbon taxes, its transferability and persuasiveness is complicated by what the dispute panel failed to consider.[117] The panel failed to consider whether the domestically taxed U.S. feedstock and imported chemicals were "like" products, nor did it consider whether the foreign feedstock chemicals were physically incorporated in the imported chemicals.[118] Moreover, it did not determine whether such an inquiry was even relevant.[119]

Furthermore, the WTO dispute panels of *Tuna/Dolphin I* and *Tuna/Dolphin II* held that an import ban on tuna could not be based on the manner in which the tuna were caught if the final product was not affected.[120] The cases stood for the proposition that countries

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113 Rich, *supra* note 74, at 7.

114 *See generally* Panel Report, *United States—Taxes on Petroleum and Certain Imported Substances*, BISD 34S/136 (June 17, 1987) [hereinafter Superfund], *available at* http://www.wto.org/english/tratop_e/dispu_e/87superf.pdf.

115 *Id.*

116 Herman, *supra* note 32, at 204.

117 *Id.*

118 *See* Superfund, *supra* note 114.

119 McClure, *supra* note 95, at 254.

120 *See generally* Panel Reports, *United States—Restrictions on Imports of Tuna*, BISD 39S/155 (Sept. 3, 1991) [hereinafter Tuna/Dolphin I] and *United States—Restrictions on Imports of Tuna* (June 16, 1994) [hereinafter Tuna/Dolphin II].

cannot discriminate against products based on the way they are produced unless such production processes affect the physical characteristics of the final product.[121] Under the *Tuna/Dolphin* regime, the physical characteristics of a product were the only relevant considerations for determining whether two products were "like" for GATT purposes.[122] Per the *Tuna/Dolphin* cases, border adjustments for carbon taxes would likely not be legal under GATT; however, because the cases were never adopted by the WTO, they have no legal weight and do little more than raise the fear that border adjustments "could not be justified by arguing that differences in PPMs made products 'unlike.'"[123]

Case law aside, the legislative intent behind GATT is best examined by investigating the recorded discussions of the Havana Charter for an International Trade Organization.[124] The Charter served as the basis for GATT and suggested that all taxes on inputs to a product were intended to be adjustable, regardless of whether the taxed entity was physically incorporated raw materials, non-incorporated inputs, or outputs themselves.[125]

Even assuming that carbon tax border adjustments could pass muster under GATT Article III, commentators have labeled GATT Article I as the "elephant in the room" that may categorically invalidate the border adjustment measures.[126] Article I contains the General Most Favored Nation (MFN) clause, requiring equal treatment and complete nondiscrimination among WTO signatories.[127] In relevant part, Article I states: "any advantage, favour, privilege or immunity granted by any contracting party to any product originating in or destined for any other country shall be accorded immediately and unconditionally to the like product originating in or destined for the territories of all other contracting parties."[128] In accordance with MFN treatment, "all imports of the same products must be given fully equivalent treatment vis-à-vis one another, regardless of source."[129] In particular, nations seeking to

121 *Id.*

122 *Id.*

123 McClure, *supra* note 95, at 267.

124 *Id.* at 252.

125 *Id.*

126 *Id.* at 265.

127 GATT, *supra* note 33, at art. I.

128 *Id.* at art. I(1).

129 Herman, *supra* note 32, at 200.

apply border adjustments on imports from countries with different—or no—greenhouse gas emission control policies must overcome the burden of proving that such measures do not violate the MFN clause of Article I. Due to the lack of international uniformity regarding carbon tax regimes, nations proposing to implement border adjustments for their domestic carbon taxes comprise a mixed system.[130] Because border adjustments would be imposed on trade with nations that lack policies for mitigating carbon emissions, nations would be favoring trade with some countries and penalizing products from countries with weak or non-existent climate policies.[131] This mixed system would result in the application of border adjustments to trade with some nations but not others, and the WTO would very likely find that such a mixed system categorically violates MFN treatment and therefore GATT Article I.[132] However, the possibility that a carbon tax regime can comport with obligations under both the Kyoto Protocol and the WTO was salvaged by the WTO Appellate Body's intervention in *Shrimp/Turtle*.

The *Shrimp/Turtle* case represents "a fundamental shift in WTO jurisprudence"[133] and arguably enables nations to discriminate based on PPMs to achieve environmental goals.[134] Despite complaints from several Asian countries that the United States could not apply its laws to foreign PPMs, the Appellate Body in *Shrimp/Turtle* upheld a U.S. law that restricted imports of shrimp caught in nets that were not equipped with turtle excluder devices.[135] The Appellate Body ultimately ruled against the United States because of the manner in which the law was implemented, but it found that the law was permissible under the Article XX exception for efforts relating to the conservation and protection of an "exhaustible natural resource[]."[136] In doing so, "the Appellate Body completed a transition in dispute settlement reasoning that, if sustained, would permit members to invoke the Article XX exemptions to regulate imports on the basis of non-product related PPMs to accomplish environmental objectives

130 McClure, *supra* note 95, at 265.

131 *Id.*

132 *Id.* at 266.

133 DEAL, *supra* note 4, at 8.

134 Rich, *supra* note 74, at 9.

135 *See generally* Appellate Body Report, *United States—Import Prohibition of Certain Shrimp and Shrimp Products*, WT/DS58/AB/R (Nov. 6, 1998) [hereinafter Shrimp/Turtle], *available at* http://www.wto.org/english/tratop_e/dispu_e/58abr.pdf.

136 GATT, *supra* note 33, at art. XX(g).

both outside their jurisdiction and in the global commons."[137] The *Shrimp/Turtle* case stands for the proposition that non-product related PPMs may be acceptable restraints on international trade where the implementing nation's purpose is to protect a resource that is found in the global commons.[138]

Despite the potential support that this case provides for the legality of border adjustments for carbon taxes, it is important to note that, as with *Superfund*, it may be difficult to argue that *Shrimp/Turtle* strictly supports the assertion that domestic laws may be applied to restrict imports on the basis of carbon-emitting PPMs used to make the imported product. The most dissonant fact to distinguish *Shrimp/Turtle* from carbon tax border adjustments is that the former involved the protection of an endangered animal species, not the taxation and related adjustments of environmentally harmful greenhouse gas emissions. Nevertheless, *Shrimp/Turtle* is commonly interpreted as the case that opened the door for nations to use border adjustments to counteract their domestic carbon tax regimes under GATT Article XX exceptions, even when the measures would have violated GATT Articles I and III.[139]

2. Border Adjustments and GATT Article XX General Exceptions

Even if border adjustments conflict with international trade law, they might still be legal if justifiable under GATT Article XX,[140] which specifies the conditions under which Members can be exempted from WTO general rules. Two of these enumerated exemptions could be relevant in the case of border adjustments: if doing so is "necessary to protect human, animal, or plant life or health,"[141] or if it "relat[es] to the conservation of exhaustible natural resources."[142] WTO panel rulings have held that "governments bear the burden of justifying any measure taken under these [Article XX] exceptions and affirmatively demonstrating that the measure is both

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137 PETER MORICI, ECON. STRATEGY INST., RECONCILING TRADE AND THE ENVIRONMENT IN THE WORLD TRADE ORGANIZATION (2002).

138 *See* DEAL, *supra* note 4, at 11.

139 *See* Charnovitz, *supra* note 85.

140 *See* GATT, *supra* note 33, at art. XX.

141 *Id.* at art. XX(b).

142 *Id.* at art. XX(g); *see also* Int'l Ctr. for Trade & Sustainable Dev., *Obama Criticizes Border Tax Adjustments in House Climate Bill*, 13 BRIDGES WKLY. TRADE NEWS DIG. at 4 (July 1, 2009) [hereinafter *Obama Criticizes BTAs*], *available at* http://ictsd.org/downloads/bridgesweekly/bridgesweekly13-24.pdf.

'necessary' and directly connected with the need to protect human life or health or truly is a legitimate conservation measure."[143] In addition, we must keep in mind that the introductory paragraph ("chapeau") of Article XX allows for such measures as long as they "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."[144] Such an exemption would most likely "center on whether, under the introductory phrase of GATT Article XX, a [border adjustment] . . . is applied on a variable scale that takes account of local conditions in foreign countries, including their own efforts to fight global warming and the level of economic development in developing countries."[145] Therefore, a government "would also have to show that the measure is being applied squarely to avoid 'leakage,' rather than to offset competitive concerns."[146]

Given the "strict requirements of GATT and the tendency of panels to disapprove of national measures that smack of discrimination, the debate over environmentally related border measures comes down to the availability of these GATT exceptions."[147] Consequently, nations and their policymakers alike must consider whether border adjustments for carbon taxes could survive a GATT Article XX analysis. According to the WTO Appellate Body, a two-step analysis must be followed in applying Article XX.[148] First, the proposed measure must satisfy one of the specified exceptions of Article XX. Second, the proposed measure must satisfy the chapeau of Article XX. This second layer of analysis serves as a "formidable gatekeeper,"[149] as in all cases where the Appellate Body denied an Article XX exception because the chapeau was not met.[150]

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143 Herman, *supra* note 32, at 211.

144 *See* GATT, *supra* note 33, at art. XX.

145 Joost Pauwelyn, *U.S. Federal Climate Policy and Competitiveness Concerns: The Limits and Options of International Trade Law* 3 (Nicholas Inst. for Envtl. Policy Solutions, Duke Univ., Working Paper No. 07-02, 2007), *available at* http://nicholasinstitute.duke.edu/sites/default/files/publications/u.s.-federal-climate-policy-and-competitiveness-concerns-the-limits-and-options-of-international-trade-law-paper.pdf.

146 *Obama Criticizes BTAs*, *supra* note 142, at 4.

147 Herman, *supra* note 32, at 208.

148 McClure, *supra* note 95, at 269.

149 Arjun Ponnambalam, *U.S. Climate Change Legislation and the Use of GATT Article XX to Justify a "Competitiveness Provision" in the Wake of Brazil-Tyres*, 40 GEO. J. INT'L L. 261, 274 (2008).

150 Pauwelyn, *supra* note 145, at 37.

a. Exceptions to GATT Article XX

GATT Article XX lists two relevant exceptions under which nations may argue for the legality of the border adjustments for their carbon tax regimes. Paragraph (b) creates an exception for measures "necessary to protect human, animal, or plant life or health."[151] Additionally, the Appellate Body[152] elucidates the definition of "necessary" as not the least-restrictive approach as the natural definition suggests, but instead requires merely a less restrictive approach supplemented with a necessity test.[153] To determine whether the measure truly is necessary, the Appellate Body conducts the test on a case-by-case basis, weighing the following factors: (1) the contribution made by the measure to the enforcement of the regulation at issue, (2) the importance of the common interests or values protected by the regulation, and (3) the accompanying impact of the measures on imports or exports.[154]

The environmental measure proposed in *EC-Asbestos*[155] was the first to satisfy the Appellate Body's necessity analysis.[156] The WTO explained that the more "vital or important common interests or values" pursued by the measure, the more likely it would be to deem the proposed measure necessary.[157] Due to the sparse guidance from WTO DSBs regarding the exception concerning measures "relating to the conservation of exhaustible natural resources,"[158] such an analysis would be very difficult and highly speculative—the result is to leave an analysis of this exception "unsettled" for now.[159] However, the exception concerning measures "necessary to protect human, animal or plant life or health"[160] contains sufficient precedent and WTO

151 GATT, *supra* note 33, at art. XX(b).

152 "The Appellate Body is composed of seven [WTO] Members who are appointed by the Dispute Settlement Body (DSB) to serve for four-year terms. Each person may be reappointed for another four-year term. Terms are staggered, ensuring that not all Members begin and complete their terms at the same time." *Appellate Body Members*, WORLD TRADE ORG., http://www.wto.org/english/tratop_e/dispu_e/ab_members_descrp_e.htm (last visited Mar. 12, 2013).

153 McClure, *supra* note 95, at 269.

154 *Id.*

155 Appellate Body Report, *European Communities—Measures Affecting Asbestos and Asbestos-Containing Products*, WT/DS135/AB/R (Apr. 5, 2001).

156 *See id.*

157 WORLD TRADE ORG., TRADE AND ENVIRONMENT AT THE WTO 21, 52 (2004).

158 GATT, *supra* note 33, at art. XX(g).

159 Herman, *supra* note 32, at 212.

160 GATT, *supra* note 33, at art. XX(b).

administrative analysis to be scrutinized in relation to its suitability as justification for permitting border adjustments under GATT Article XX.

Nations seeking to prove the legality of border adjustments for their carbon tax regimes will likely pursue an argument under the exception from paragraph (g) for measures "relating to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption."[161] Per *Shrimp/Turtle*, restrictive conditions based on PPMs intended to protect the environment, such as border adjustments, may be considered legal under the Article XX, paragraph (g) exception.[162] The *Shrimp/Turtle* Appellate Body applied a three-prong test to determine whether the exception was satisfied.[163] For the purposes of determining whether border adjustments satisfy paragraph (g), the following must be considered: (1) whether the resource in question, here the atmosphere, is an exhaustible natural resource; (2) whether a substantial relationship exists between border adjustments and the conservation of the exhaustible natural resource; and (3) whether border adjustments are even-handed, or made effective "in conjunction with restrictions on domestic production or consumption."[164]

Recall that despite the WTO's inability to bind its DSBs to precedent,

> [i]f the reasoning developed in the previous report in support of the interpretation given to a WTO rule is persuasive from the perspective of the panel or the Appellate Body in the subsequent case, it is very likely that the panel or the Appellate Body will repeat and follow it.[165]

This principle allows for a reasonable determination of how DSBs will rule in subsequent cases with regard to the abovementioned three-prong test.

The Appellate Body's decision in *Reformulated Gasoline* provides a durable answer to the first inquiry by explaining that air, and therefore the atmosphere, is an exhaustible natural resource.[166]

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161 *Id.* at art. XX(g).

162 Shrimp/Turtle, *supra* note 135.

163 *Id.*

164 GATT, *supra* note 33, at art. XX(g).

165 *Legal Effect of Panel and Appellate Body Reports*, *supra* note 100.

166 Appellate Body Report, *United States—Standards for Reformulated and Conventional Gasoline*, WT/DS2/AB/R (May 20, 1996).

Because the paragraph (g) exception should be considered "in light of contemporary concerns of the community of nations about the protection and conservation of the environment,"[167] the ratification of United Nations Framework Convention on Climate Change and the Kyoto Protocol by the majority of nations would also seem to support an affirmative answer to this element. The "substantial relationship" required by the second element necessitates that a reasonable "means and ends" relationship exist between conserving the exhaustible natural resource and the proposed measure; incidental relationships will not suffice.[168] Some critics believe that border adjustments for carbon taxes will fail this element because they primarily aim not to mitigate greenhouse gas emissions, but to remedy loss of competitiveness by domestic industries subject to carbon taxes.[169] However, an increasing number of scholars and academics contend that border adjustments on carbon taxes would satisfy this element because they constitute an integral part of the carbon tax regime aimed at reducing emissions.[170]

As an integral part of a regime focused on conserving an exhaustible natural resource, carbon tax border adjustments likely meet this second GATT requirement. However, even in the absence of such a finding before a subsequent Appellate Body, there remains a chance that the regime will not be found to violate international trade law. Assuming the carbon tax border adjustments are not applied arbitrarily or in violation of other GATT rules, the WTO may still decide to overlook the absence of a direct relationship and accept the lesser relationship between the carbon taxes and border adjustments if there is sufficient and convincing support from the international community in favor of the measures. Although only speculative at this time, as international sentiments and the effects of climate change continue to wax toward ever new zeniths, the likelihood of such an eleventh-hour acceptance becomes more and more probable.

The third element presents another difficult analysis and further obfuscates a prediction of how the WTO may rule. Element three of the *Shrimp/Turtle* inquiry requires the evenhandedness of the

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167 *See* Shrimp/Turtle, *supra* note 135.

168 *Id.* ¶ 135–42.

169 Rich, *supra* note 74, at 8.

170 *See generally* Pauwelyn, *supra* note 145, at 35; Harro van Asselt et al., *Addressing Leakage and Competitiveness in U.S. Climate Policy: Issues Concerning Border Adjustment Measures* 53 (Climate Strategies, Working Paper, 2009).

proposed measure to be "made effective in conjunction with restrictions on domestic production or consumption."[171] Border adjustments on carbon taxes for imported goods likely would satisfy this requirement because they are indeed imposed and made effective in conjunction with a domestic carbon tax.[172] The complications arise regarding border adjustments for carbon taxes on exported goods.[173] Literally interpreted, export border adjustments would satisfy this third element because they are implemented in conjunction with a domestic carbon tax that similarly restricts production or consumption. It may be argued that the principal purpose of export border adjustments is to prevent competitive disadvantage rather than to conserve an exhaustible natural resource; however, evidence that the carbon taxes imposed on domestic production of carbon-intensive goods matched the levies on similar imported goods would vitiate this point of opposition.[174] Therefore, any tax regime must comport with the requirement to tax both imports and exports at a similar rate in order to reject suggestions that such a regime is simply a façade for implementing protectionist policies.

b. The WTO's Reading of the GATT Article XX Chapeau

The chapeau, or introductory paragraph of GATT Article XX general exceptions, lays out the general context within which the exceptions should be read and interpreted. Proposed measures "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" would violate the chapeau and, therefore, not qualify for the Article XX exception.[175]

A chapeau discussion calls for a two-pronged analysis because the chapeau itself is separated into two distinct clauses: (1) arbitrary and unjustifiable discrimination between countries where the same conditions prevail, and (2) disguised restriction on international trade.[176] Each clause constitutes a different requirement that proposed

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171 Shrimp/Turtle, *supra* note 135, ¶ 143–45.

172 McClure, *supra* note 95, at 272–73.

173 *Id.*

174 RAPHAEL COTTIN ET AL., WORLD TRADE ORG., WTO AND ENVIRONMENT: BORDER TAX ADJUSTMENTS 13, *available at* http://graduateinstitute.ch/webdav/site/mia/users/Imene_Ajala/public/WTO%20Seminar%202009/cottin_meier_bordertax.pdf.

175 GATT, *supra* note 33, at art. XX.

176 *Id.*

measures must satisfy in order to pass muster under the chapeau.[177] Carbon tax border adjustments on international trade between countries with similarly effective carbon tax regimes arguably would fail to satisfy the first clause. For example, the United States likely could not legally impose border adjustments on trade with European Union countries that already had their Emissions Trading Schemes (ETS) in place because of the similarity of the conditions in both countries.[178] Although the measures are different, the effects of a carbon tax are comparable to those of an emissions trading system. Conversely, a nation within the European Union could impose carbon tax border adjustments on trade with another E.U. nation that had not adopted such measures because the "same conditions" would not exist.

The Appellate Body's decision in *Brazil-Tyres*[179] sheds considerable light on the chapeau's second requirement, which prohibits measures constituting disguised protectionism. It supports the assertion that carbon tax border adjustments imposed on a neutral standard[180] and criteria unrelated to a specific country may satisfy the chapeau's second requirement.[181] In *Brazil-Tyres* and *Shrimp/Turtle*, the Appellate Body suggested that a DSB would seek to balance the competing interests when interpreting a treaty exception rather than following the traditional, narrow approach. Consequently, "this perspective is much more likely to produce a favorable ruling regarding a destination-based carbon-tax border adjustment than a more traditional legalistic narrow view of the exceptions clause."[182] For this reason, the WTO will look upon carbon tax border adjustments favorably because of the Appellate Body's willingness to conduct a balancing inquiry. Consequently, the international interest of mitigating climate change and global warming by reducing greenhouse gas emissions will weigh strongly in favor of carbon tax border adjustments.

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177 *Id.*

178 Pauwelyn, *supra* note 145, at 38–39.

179 Appellate Body Report, *Brazil—Export Financing Programme for Aircraft*, WT/DS46/AB/R (Aug. 20, 1999).

180 An amount of emissions created during production processes. *Id.*

181 *Id.*

182 Keith A. Kendall, *Carbon Taxes and the WTO—A Carbon Charge without Trade Concerns?* (2012) (unpublished manuscript), *available at* http://works.bepress.com/keith_kendall/4/.

CONCLUSION

The world trade regime is not inherently at odds with climate change mitigation; nor is the climate change regime inherently at odds with trade liberalization. The WTO acknowledges the need for multilateral efforts to protect the environment, and the Kyoto Protocol explicitly admonishes against implementing policies that adversely affect international trade.[183] Nevertheless, conflict between the two regimes is likely to arise when certain policies, implemented to reduce carbon emissions in accordance with the Kyoto Protocol, inadvertently affect international trade. As illustrated above, such is the case with the implementation of a carbon tax regime. While the lack of certainty is daunting to any rational actor, the consequences of not acting may be even greater.[184]

The current trade regime provides for an imperfect market that lacks accountability for the direct and indirect costs that negative externalities, such as carbon emissions, inflict upon the planet. However, the application of a carbon tax regime as described in this article provides an incentive structure that requires countries to account for those costs and reduces emissions where feasible. Additionally, such a regime seems to be perhaps the only current possible structure that provides an answer for the carbon leakage and collective action problems that otherwise plague international climate change mitigation policy.[185] Therefore, despite the uncertainty in WTO jurisprudence, the world should not be reticent to embrace such taxation regimes for fear of asymmetry with WTO guidelines. The time for action is now, and the unilateral power inherent in such a climate change policy makes it the most appropriate option for current implementation.

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183 *Kyoto Protocol*, *supra* note 21, at art. 2, sec. 3.

184 *See* Plumer, *supra* note 17.

185 *See* Elliott et al., *supra* note 90, at 469; Christa Clapp et al., *Levelling the Playing Field in a Fragmented Carbon Market: Do Carbon-Based Border Tax Adjustments Work?*, CLIMATE SCI. & POL'Y (Sept. 8, 2010), http://www.climatescienceandpolicy.eu/2010/09/levelling-the-playing-field-in-a-fragmented-carbon-market-do-carbon-based-border-tax-adjustments-work/.