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The Devil in the Deal: Trade Embedded Emissions and the Durban Platform

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Several commentators have expressed concern that the Durban Platform, the latest product of the United Nations Framework Convention on Climate Change (UNFCCC), does not include more specific language about the need for equitable mitigation efforts. The concept of "common but differentiated responsibilities" has long been a cornerstone of the Convention, recognizing important differences between developed and developing economies, both with respect to historical responsibility for emissions and developing nations' rights to economic growth and need for poverty alleviation. On the other hand, while most agree that ensuring equity is essential for a mutually agreeable solution, some commentators have argued that the differentiated approach laid out by the Kyoto Protocol and strongly iterated in most Convention documents until Durban, set up a false opposition between the developed and developing nations; resulting in an political impasse which has prevented the achievement of adequately ambitious and binding mitigation commitments.

The Durban platform certainly has the potential to address this impasse. However, it is important to recognize that the hard work of negotiating legally binding emissions reductions has yet to be undertaken, and will likely be mired in familiar, contentious and lengthy political struggles that continue to center on the equitable distribution of mitigation responsibly. I argue that these struggles, which many blame on the equity track, are more accurately linked to a reliance on production-based emissions accounting systems and policies. Here I add my voice to a growing number of commentators who suggest that the Ad Hoc Working Group on the Durban Platform for Advanced Action need not abandon an equity track. Rather there is considerable potential to reinvent it in a more politically agreeable form through the incorporation of consumption-based approaches to emissions accounting and mitigation.

Currently, under the UNFCCC, parties are only required to provide inventories of greenhouse gasses (GHGs) emitted within their borders and jurisdictional territories. While there are several problems with this approach, for the purpose of my argument here, I focus on two. First the production perspective doesn't provide a good framework for thinking about or achieving equity. Its territorial emphasis fosters an atmosphere of competition and protectionism as nations jockey to protect their competitiveness. Within this framing, many developed nations have argued that the

differentiated approach provides an unfair advantage to developing countries. They claim that as carbon prices rise in response to climate policies at home, domestically-produced goods will no longer be competitive, building demand for cheaper imports at home and driving production overseas. While there is limited evidence to suggest that climate policy has had a direct influence on the shift in production to developing economies (often referred to as strong carbon leakage), concerns about trade competitiveness are often cited as the primary reason that more ambitious mitigation strategies have not been adopted.

Perhaps more important for my argument here is that the production approach to emissions accounting does not hold developed economies responsible for their full climate impact and is thus - at is very base -- inequitable. While countries like Sweden and the UK have reported satisfying their 1st commitment Kyoto targets, studies conducted by their own governments (UKCEC 2012, Swedish EPA 2010) suggest that if the "total climate impact" of all the goods and services their citizens consume is included in calculations, their emissions are much higher than Kyoto reports suggest. For example, the UK's most recent UNFCC inventory reported a 14% reduction in territorial emissions since 1990, suggesting that climate policies worked to reduce emissions even during a period of overall economic growth. However, when the carbon associated with the products and services that UK citizens demand, buy and consume are included in calculations, government data reveal that the UK's emissions actually grew by 20% over the same time period. In Sweden, consumption-based calculations yield emissions 25% higher than the production method.

While many nations have made great strides improving production efficiencies, transitioning to service- and information-based economies, and decoupling economic systems from the ecological base; the proverbial devil of increased emissions can be found in consumption. Increased international trade and sustained growth in consumption has, in many cases, offset domestic climate mitigation efforts, resulting in a net increase in atmospheric concentrations of GHGs (Petherick 2012). As international trade has expanded over the last several decades, global emissions have also increased. Compared to 1% average annual growth rates during the 1990s, emissions increased at an accelerated average rate of 3.4% between 2000 and 2008 (Davis & Caldiera 2012). Because emissions don't yield to political borders, it really doesn't matter where fossil fuels are combusted. High and growing levels of international trade and consumption don't come without environmental consequence, even when pollutants are emitted thousands of miles from home.

Consumption-based studies shed light on these "hidden", "embodied" or "trade embedded" emissions and make it clear that reported reductions have all too often resulted in increased emissions outside national boundaries. This "emissions outsourcing" or "weak carbon leakage" results in an unfair burden for developing nations who must account for and mitigate the GHGs associated with the goods and services they produce even though many of their own citizens cannot afford these products and do not have the opportunity to benefit from associated emissions. Despite China's status as the world's largest carbon emitter, it is estimated, that between 22 to 45% of nation's territorial emissions are attributable to products produced for consumers in other nations (Sato 2012). Under the production-based accounting system, China is held responsible for all of these emissions. It can certainly be argued that this is justified since production contributes to economic development in China. Yet at the same time it also seems fair that the consumers of these goods take some responsibility for the environmental impacts of the products they demand and consume, regardless of where associated emissions were released (Peters 2008).

The emissions associated with global trade continue to grow in importance. Between 1990 and 2008 the CO2 emissions embedded in products bound for foreign markets increased from 4.3 to 7.8 gigatons, so that by 2008, 28% of total global emissions were associated with international trade (Peters et.al. 2011). Yet the current production-based international negotiations do not provide a good solution for dealing with emissions associated with products produced in one country but ultimately destined for another.

Fortunately research on and support for consumption-based accounting has recently surged. Several countries including Sweden, the UK, Switzerland and Scottland have already begun the process of consumption-based reporting. And recently, at the UNFCCC workshop in Bonn Germany, the Chinese delegation expressed strong support for the consumption approach, further reinforcing a 2009 statement by Gao Li, Director of China's Department of Climate, that the inclusion of a consumption-based perspective is a "very important item to make a fair agreement" (BBC 2009).

Despite growing support, critics have suggested several potential drawbacks of consumption perspectives. First there is a concern that consumption-based accounting requires more complex calculations, and thus more uncertainty. However, over the last decade great strides have been made to perfect consumption-based models (Weidmann 2009) and compile more accurate data sets (Peters, Davis & Andrew 2012). Drawing on foreign trade statistics, process life-cycle analyses, and aggregated environmental performance studies, several robust and reliable tools exist to analyze the climate impact of consumption. Multi-Regional Input Output Analysis (MRIOA) is the most common technique used to model global trade (Peters, Davis & Andrew 2012). Perdue's Global Trade Analysis Project, the Stockholm Environmental Institute and the Norwegian University of Science and Technology are among the many institutions that have helped to pioneer these models and analyze the emissions embodied in global trade (Sato 2012). Despite skepticism about the certainty of consumption-based models and datasets, when differences of definition and data inputs between studies are controlled for, consumption-based accounts have proven to be more consistent and robust than previously assumed (Peters & Solli 2010).

A second risk associated with a consumption approach is the potential to shift from an extreme emphasis on production to a solitary emphasis on consumption. If this shift were to occur, it could reinforce what some deem is a contemporary over-emphasis on individual responsibility in sustainability policy. While consumer demand certainly works to drive production and emissions, a sole emphasis on consumer choice neglects the power of social and economic structures to constrict consumer power. I have argued elsewhere that the neoliberal devolution of responsibility for environmental welfare to market mechanisms and individual consumers is a limited approach that must, at minimum, be complimented by structural and policy-based solutions (Isenhour 2010). Further, an over-emphasis on consumer responsibility allows producers to neglect their obligations. Because both consumers and producers benefit from production and emissions, experts argue that responsibility should be shared (Lenzen et. al. 2007), or suggest supplementing production-based national emissions inventories (NEI) with "shadow" consumption measures to help differentiate commitments between countries and adjust for trade (Peters & Solli 20108, Weidmann et.al. 2011, Munksgaard 2002). Consumption-based approaches for determining differentiated responsibilities are not without precedent in international environmental agreements. The Montreal Protocol has successfully regulated HFCs utilizing a consumption-based perspective (Ahmand & Wyckoff 2003).

Finally, perhaps the most common critiques are linked to the belief that territorial perspectives are so engrained that an effort to incorporate consumption would delay an already urgent and strained

negotiation process, damage trade and lead to breaches in national sovereignty. An emphasis on consumption, some claim, would create a situation in which concerned importers have limited power to control production in other lands without significant oversight or breaching another nation's sovereignty. Greg Barker, the United Kingdom's Minister for Climate Change commented that, "if you were to tell most members of the United Nations that their territorial sovereignty would henceforth be suspended because we intended to take account of our imported embedded emissions, I think there would be an absolute firefight" (UKECCC 2012). However, University of Leeds expert John Barrett has disputed this claim, testifying before the British government that a consumption approach could leverage the power of trade to extend British influence over foreign emissions (UKECCC 2012).

While many of these concerns are valid, they can be addressed by well-designed policy. The most commonly discussed proposal is a border tariff adjustment based on the carbon content of imports. Proponents argue that these tariffs are essentially the same as a value added tax (VAT). Since these tariffs are levied at the destination rather than the origin, they are a tax on consumers, not producers; yet eliminate any competitive advantage for imports whose prices were, prior to adjustment, essentially subsidized by domestic climate policy. This solution could help to level differences in carbon pricing between countries and eliminating concerns about competition (O'Sullivan 2012, Carmondy 2011).

UK Minister of Climate Change Greg Barker claims unilateral border adjustments would be highly controversial and could potentially start a trade war (Barker, Betts & Capper 2012). Research by Matoo and colleagues provides some support for this assertion, indicating that carbon tariffs imposed "across-the-board on the carbon content of imports" would harm exporting nations like China and India, potentially resulting in export losses of up to 20% (2009:3). Yet proponents argue that if a consumption-based border tariff on the carbon embedded in imports is used to compliment a domestic emissions trading scheme or GHG tax, then these trade-based concerns are somewhat diminished (Monjon & Quirion 2011). It does seem that border adjustments are WTO compliant. A report issued by the WTO and UNEP in 2009 confirmed that "Rules permit, under certain conditions, the use of border tax adjustments on imported and exported products" (WTO 2009:xix). Making the proposal for border adjustment even more attractive, some authors have suggested that a portion of the taxes levied could be fed into the Clean Development Mechanism, a program designed to assist developing countries in their efforts to improve alternative energy and production-based technologies. Peters and Hertwich (2008) claim that because consumption based NEIs identify sectors and countries that contribute most to emissions, they provide a "natural" method to target and fuel the Clean Development Mechanism.

Border adjustments can help to overcome problems with carbon leakage, "emissions shuffling" and trade distortions (Boiteir 2012), but it is unlikely that unilateral national actions can result in emissions reductions adequate for closing the ambition gap and solving such a significant global problem. Carmondy (2009, 2011) argues very persuasively that while global emissions associated with production are the same emissions associated with consumption, the perspective we take makes a difference in policy and our hopes for preventing dangerous global warming. He argues that while unilateral border adjustments will help, an international carbon tax on consumption emissions could bring us closer to a globally harmonized response. Countries relying on carbon-intensive production would no longer have a trade advantage as the prices of their products rise and countries with high per-capita consumption will pay prices closer to the true costs of consuming carbon-intensive goods

and services (2011:49). This approach gives consumers a better sense of their true impact but also encourages producers to innovate in order to remain competitive.

Regardless of the form policy takes, understanding the impact of emissions embodied in trade and consumption provides a more truthful, honest and equitable means to move forward. The current impasse in the UNFCCC is due not only to concerns about competitiveness, but also to developing nations' concerns that they are being blamed for emissions that essentially fuel western prosperity and extravagant lifestyles. Consumption-based approaches have the potential to address both these concerns by eliminating carbon leakage and officially reallocating some responsibility for emissions away from developing nations to their true consumers. Recognizing the concerns of China and other developing economies that worry about their rights to development under production-based approaches signals a willingness to compromise that could help to break down political barriers and facilitate the negotiation process (PIRC 2011).

Moving forward from Durban there is great potential to achieve legally binding emissions reductions. But without attention to issues of equity, the road ahead will be just as contentious as the road we've already paved. Ignoring inequity will certainly not assist us as we attempt to close the ambition gap and avert dangerous climate change. We must continue to remind ourselves that the world's most prosperous countries achieved wealth due to several centuries of unlimited fossil fuel combustion and emissions. Consumption-based approaches make it clear that affluent lifestyles and prosperity continue to be supported by the ability to outsource emissions, consume artificially cheap products, and allocating environmental consequences to those whose need for economic development leaves them with a constrained set of options. The integration of consumption-based perspectives is not only a more ethical approach, but it is also

Consideration of consumption-based perspectives would provides a fuller, more accurate and ethical understanding of climate impact and could potentially break the current political impasse by basing our assessments of "common but differentiated responsibilities" on empirical data rather than political maneuvering.

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