Trade and Climate Change Linkages

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Acronyms

CDM	Clean development mechanism
EU	European Union
GATS	General Agreement on Trade in Services
GATT	General Agreement on Tariffs and Trade
GHG	Greenhouse gases
IIA	International investment agreement
MFN	Most-favoured nation
TRIMS	Trade Related Investment Measures (Agreement on)
TRIPS	Trade-Related Aspects of Intellectual Property Rights (Agreement on)
UNFCCC	United Nations Framework Convention on Climate Change
WTO	World Trade Organization

I. Introduction

1. The need for the international community to tackle climate change is clear, and has been repeatedly confirmed at the highest levels by leaders worldwide. Not so clear, at first blush, is why trade policy makers should concern themselves with this challenge, the aims of trade being, after all, economic growth rather than environmental integrity.

2. The answer is first that trade policy is not about economic growth only. The Ministerial Declaration that launched the Doha Agenda "strongly reaffirmed" the members' commitment to the objective of sustainable development and argued that the goals of the multilateral trading system, and acting for the protection of the environment and the promotion of sustainable development, "can and must be mutually supportive."

3. More fundamentally, and underlying this argument, trade's ability to foster growth and increased wellbeing depends ultimately on a healthy environment. The Stern Report put this into perspective by calculating that the costs of action on climate change were in fact less than the costs of inaction, and noting that failing to address the problem creates the equivalent of a 20% loss of GDP globally, now and forever, with losses falling disproportionately on poor countries. In such a context, delivering on the fundamental goals of the multilateral trading system becomes impossible.

4. Moreover, there are a host of economic benefits to addressing climate change beyond avoiding costs. A vast array of mitigation measures involve increasing efficiency of production and consumption, reducing the amount of energy needed to power the global economy.

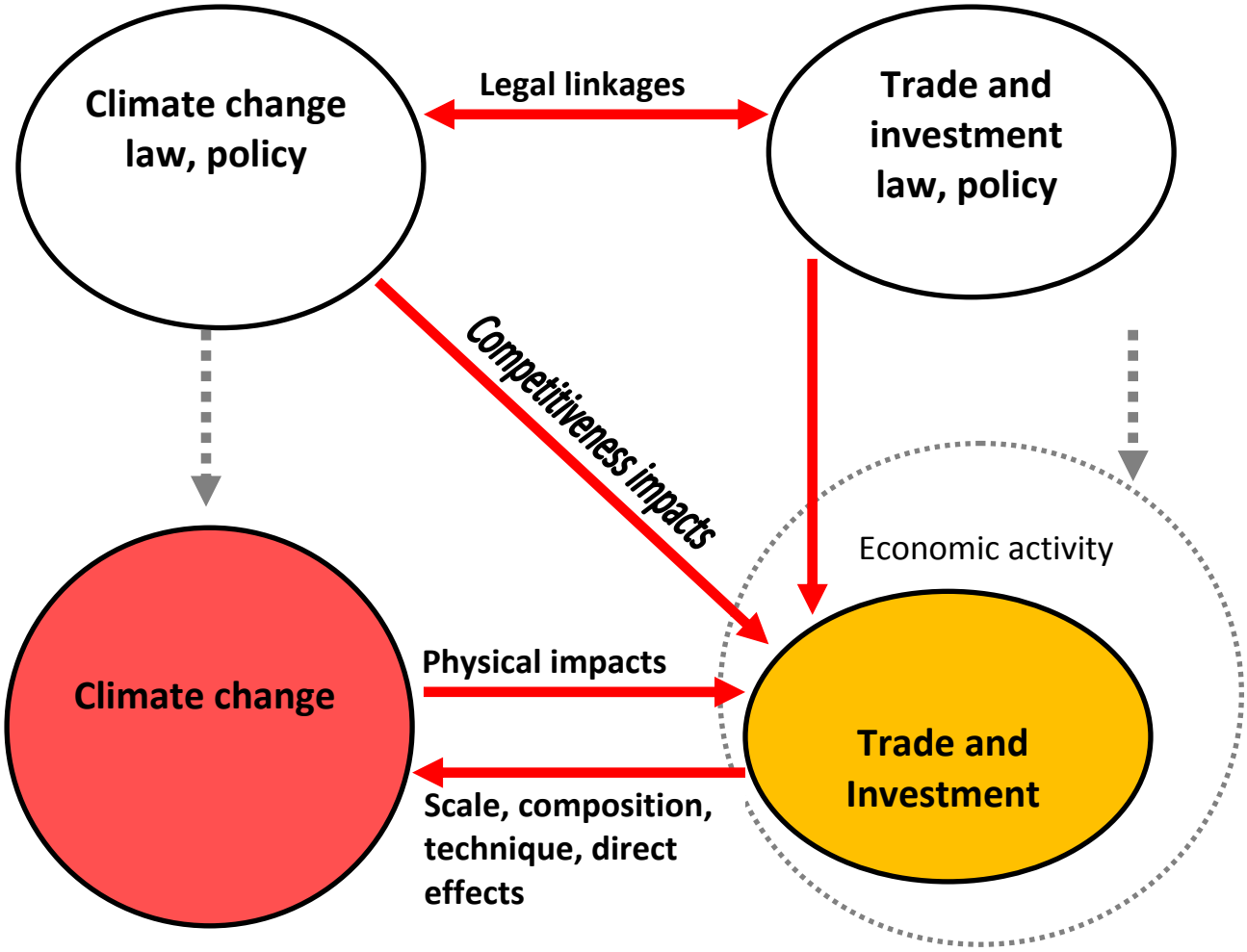
5. This paper sets out to scope the linkages between trade and investment, and climate change. It is an understandably broad set of linkages, given the fundamental connection between climate change and economic activity. Not all of them will be of interest to trade policy makers. A second background paper, produced as a companion to this piece, explores in greater depth several linkages of particular importance if we are considering how trade and investment policy might contribute to efforts to address climate change. In this paper a much broader landscape is drawn, as a foundation for the subsequent piece.

6. Figure 1 sets out the space within which we will describe those linkages. It shows the following sorts of relationships, each of which is discussed below in greater depth:

7. **Trade policy impacts on climate change:** How do trade liberalization, investment agreements or other sorts of trade policy changes alter the economy in ways that impact on climate change? (via increased scale of economic activity, changes in the composition of that activity, changes in technologies and production processes)

8. **Legal linkages:** How do the two bodies of law—WTO law and the UNFCCC and its Kyoto Protocol—relate to one another? Where are the potential areas of conflict or synergy?

Figure 1: Trade, investment and climate change linkages



9. **Physical impacts of climate change on trade and investment**: How can climate change impacts affect trade and investment flows? (e.g., destruction of trade-related infrastructure; creation of new trade routes, shifts in agricultural comparative advantage)

10. **Competitiveness impacts:** does the implementation of climate policy have competitiveness implications for trade and investment flows and stocks?

II. Trade policy impacts on climate change

11. It is primarily from this class of impacts that the second background paper will draw, in highlighting the ways that trade policy might serve to facilitate efforts to address climate change. These sorts of impacts all begin with some sort of trade policy change, such as liberalization of trade, or the signing of investment agreements.

12. The economic changes that follow from such trade policy changes can have significant environmental impacts. There is a rich literature on trade-environment linkages, and it can serve well in identifying the sorts of impacts that trade policies might have with respect to climate change. Guided by a taxonomy that has found widespread use in the literature, this paper considers four types of effects, each of which is briefly described below:

    - Scale effects
    - Composition effects
    - Technique effects
    - Direct effects

13. It should be noted that in almost all most cases several of these effects will act simultaneously, and with conflicting effects, in the wake of trade policy changes. They are considered separately simply in order that the distinct contributions and dynamics of each may be better understood. But it should be remembered that this is in some sense an artificial separation.

14. Scale effects

Scale effects are simply an increase or decrease in the scale of the economy, holding constant the mix of goods and services produced, and the techniques used to produce them. An increase in scale is a predicted result of trade liberalization, which increases standards of living by achieving more efficient production of goods and services. The scale effect will, in and of itself, have negative climate change impacts; the more goods and services produced, the more greenhouse gases (GHGs) emitted.

15. Composition effects

The composition of each national economy will also change after trade liberalization, tilting towards production of those goods and services in which countries enjoy comparative advantage relative to their trading partners. As a result, some economies will become more GHG-intensive overall, and some may become less so. From a global perspective this does not necessarily mean that GHG emissions are unchanged. As global income levels increase, the global economy will change to favour those goods that are relatively "luxurious." This may be good from a climate change perspective (consumers can afford more solar panels) or bad (consumers can afford more automobiles).

16. Technique effects

Trade liberalization, and investment agreements in particular, may bring new techniques of production that are more energy efficient, and therefore emit fewer GHGs per unit of output. This may be due to foreign investors bringing new technologies, or domestic firms having to increase efficiencies in the face of foreign competition. In Argentina, trade liberalization vastly reduced the impacts of agriculture, as new technologies like direct seeding became affordable to farmers, reducing the amount of

time spent ploughing the fields. In and of itself, the technique effect is almost always positive for the environment.

17. Direct effects

The very fact of increased trade, in and of itself, will lead directly to more global GHG emissions from increased transport of goods. The GHG-intensity of transport varies enormously from marine transport to trucks to air freight, but in the end all modes of transport have some emissions.

18. It is helpful to think about the sorts of specific trade policies that might invoke different mixes of these conflicting effects. Tariff lowering across the board will have, of course, a mixed result; the scale and direct effects will be negative, the technique effect will be positive, and the composition effects will be *a priori* indeterminate. Tariff lowering in particular sectors, though, may have more predictable results. Lowering tariffs on environmental goods and services, for example, is likely to bring about a strong enough technique effect that the end result is positive. Conversely, lowering tariffs just on particularly GHG-intensive goods (whether intensive in production or in their end use) is likely to aggravate climate change.

19. Beyond tariff changes, other forms of trade policy can also be imagined to have specific climate change impacts. Agreement to restrict domestic subsidies, for example, will have a positive composition impact if the subsidies in question encourage the production or use of particularly GHG-intensive goods. On the flip side, agreement to allow domestic subsidies to support climate-friendly goods and technologies might have positive climate change impacts, though the wider long-term impacts of any increased subsidies would demand careful consideration.

20. Investment law and policy might also be used to impact climate change. The mere signing of an international investment agreement (IIA) will have uncertain results; there is a debate in the literature on whether IIAs by themselves actually increase foreign direct investment, or whether they need to be complemented by other factors to do so. Moreover, while we would normally assume that new investment involves more efficient techniques it is conceivable, though unlikely, that this might not always be the case.

21. An inward investment policy that filtered foreign direct investment to demand high standards of efficiency, or blocked investment in GHG-intensive sectors, would certainly have climate change benefits at the national level. China, for example, has implemented a policy that discourages investment in processing trade sectors that consume high amounts of energy and resources. From a global perspective, the benefits might be lower if those same investors simply choose a less discriminating host state. IIAs with broad pre-establishment rights might actually limit the ability of host states to exercise this sort of discrimination.

22. It is also conceivable that changes in intellectual property rights law could have climate change impacts. Specifically, it is possible that weakening patent protection on climate friendly technologies could have immediate climate benefits, if it led to more widespread dissemination of those technologies. The longer term impacts, however, might be negative if weakened protection discouraged investment and innovation in sectors of promise from a climate change perspective.

III. Legal linkages

23. Another sort of linkage between trade and climate change is the interaction of the bodies of law that cover the two spheres of interest. Trade law is embodied at the multilateral level in the various WTO Agreements, at the bilateral and regional level in additional trade and investment agreements, and at the national level in the various standards, regulations and policies maintained by national governments. Climate change law is embodied in the UNFCCC and its Kyoto Protocol, as well as in the various policies and measures implemented by national governments and regional entities in an effort to fulfil their treaty obligations.

24. Most of the legal linkages literature, of which there exists a fair amount, boils down to the question: are there ways in which trade law might frustrate countries in their attempts to address climate change? The follow-on question is: if so, can we find solutions that respect the objectives of both trade and climate change regimes?

25. It should be stressed that heretofore there have not been any significant conflicts between the two bodies of law. The UNFCCC and the Kyoto Protocol do not contain any explicit trade measures in their texts. The WTO agreements do not mention climate change specifically, although they contain a number of provisions that might cover how a country enacted trade-related environmental measures.

26. In fact, both agreements contain language that can be read as striving for mutual supportiveness. The UNFCCC, in Article 3.5, states that, “Measures taken to combat climate change, including unilateral ones, should not constitute a means of arbitrary or unjustifiable discrimination or a disguised restriction on international trade.” The preamble of the Agreement Establishing the WTO recognizes that the relations among WTO members should be conducted with a view to achieving development objectives, “while allowing for the optimal use of the world's resources in accordance with the objective of sustainable development, seeking both to protect and preserve the environment and to enhance the means for doing so ... .”

27. As might be expected in light of these texts, many analysts find that the potential conflicts between the two bodies of law are almost all resolvable through careful drafting, and clear understanding of the interaction between trade law obligations and environmental measures. Some of the key issues that typically figure on those analyses are summarized below.

28. ***Tariffs***. WTO Members negotiate their tariff bindings with other Members on a most-favoured nation (MFN) basis. In other words, members may apply tariffs at lower levels than what they are bound by, but if they do they must extend the same benefits to all members equally. Tariff preference cannot be granted to certain countries on the basis of their efforts to address climate change. The exception to this rule might be lowering tariffs in accordance with the so-called *Enabling Clause*, which exempts preferential tariffs from MFN obligations as long as the purpose is to foster development in developing countries.

29. ***Standards***. Mandatory energy-related standards (technical regulations, in trade-speak) have proven to be an important instrument for meeting the objectives of the UNFCCC and its Kyoto Protocol. The WTO Technical Barriers to Trade Agreement allows these kinds of standards, but places certain process disciplines on their elaboration and application, demanding transparency and due process. Some uncertainties about WTO-compatibility remain, however, with respect to standards based on the way a product is produced (e.g., GHG-intensity of production), rather than on the characteristics of the end-product (e.g., energy efficiency). An example of this sort of standard is California's restriction on the purchase of high-carbon electricity from out of state – an effort to protect the integrity of its internal production standards. The same legal uncertainties would apply to outright bans on specific high GHG-emitting goods.

30. ***Government procurement***. Governments might want to, in the process of their often sizable purchases, give favour to low GHG-emitting goods, and punish high GHG emitters. There seems to be scope in the Agreement on Government Procurement for this sort of discrimination, even perhaps on the basis of how a good is produced. If governments use a voluntary standard as the basis for this sort of scheme, however, then it arguably elevates the standard to more like a mandatory one, the latter having to face more strict requirements under trade law.

31. ***Subsidies***. Subsidies are used frequently to support energy projects, including those related to renewable energy that can help meet Kyoto Protocol targets. The WTO Agreement on Subsidies and Countervailing Measures allows most types of subsidies, except those that are specific to a particular industry or firm, and which are contingent on exports/use of domestic inputs, or which cause injury to foreign competitors.

32. ***International investment measures***. International investment to achieve UNFCCC objectives will in part be under the Kyoto Protocol's Clean Development Mechanism (CDM), but most of it will be subject to more general agreements on international investment. For example, the WTO Agreement on Trade Related Investment Measures (TRIMS) prohibits discrimination between domestic and foreign investors. TRIMS also prohibits host states from attaching certain conditions to foreign investments, such as local content requirements. Bilateral investment agreements contain the same sorts of prohibitions, and also usually allow investors to compel host governments to enter into binding arbitration where they believe their rights under the agreements have been impaired. None of these obligations should materially affect the flow of international investment relating to the

Kyoto Protocol, unless a CDM host includes local content requirements in its CDM approval process (none have to date).

33. ***Border tax adjustments***. Many countries worry that their stringent climate measures might disadvantage their producers relative to foreign competitors that do not face such strict domestic measures (see Section 5 below). Border tax adjustment is a measure that seeks to level the playing field by taxing imports at some level that equates to costs they'd face under a domestic scheme, and rebates that same level of charges to domestic goods destined for export. The legality of these sorts of measures is uncertain, with legal opinions split on the question. Of course the final legality of any such measure would depend fundamentally on its specific design.

34. Two other issues might be usefully noted in closing this section on legal linkages. First, to clear up a common misperception: under a cap-and-trade scheme of carbon entitlements there is trading of those entitlements, which are simply permits to emit GHGs. Despite the name, this sort of trade is not covered under GATT or GATS rules, as the permits in question are neither goods nor services. They are in fact more like financial instruments.

35. Second, there are talks ongoing as part of the Doha Agenda on how the WTO should relate to multilateral environmental agreements, including the UNFCCC and its Kyoto Protocol. This relationship, of course, has bearing on all the issues described above. The concern that gave rise to the WTO talks was uncertainty about how trade law would deal with trade-related environmental measures that might be called for in environmental treaties such as the UNFCCC and Kyoto Protocol, and in which forum any disputes arising from such measures might be heard. As noted above, neither the UNFCCC nor the Kyoto Protocol call for such measures.

IV. Physical impacts of climate change on trade and investment

36. Climate change will have significant impacts on trade flows, given its expected impacts on agriculture, forestry and a number of other highly traded sectors. In general, the impacts of this type will involve changes in comparative advantage based on environmental factors. Australia's role as an agricultural exporting powerhouse, for example, may be under threat from climate change-related drought in the long term.

37. A full catalogue of these sorts of impacts is beyond this scope of the present analysis. But it is worth noting that impacts will be felt in services trade as well as goods trade. For example, in some countries climate change will likely have an adverse impact on tourism—a service that is the world's largest export earner—through impacts such as less desirable weather conditions, bleaching of coral reefs, forest die-off and other fundamental ecological changes.

38. Another sort of impact involves climate change directly affecting trade-related infrastructure, or trading routes. The Stern Report identified several of these sorts of impacts:

- Rising sea levels may endanger coastal infrastructure that supports trade, such as ports, as well as trade-related facilities located close to ports such as steel mills, petrochemical plants and other energy facilities.
- Rising Arctic temperatures will make Arctic sea lanes safer and more reliable as transport routes. However, melting permafrost may damage high latitude oil and gas installations, pipelines, as well as railways.
- Weakening of the Gulf Stream will endanger ice-free ports, such as Murmansk.
- As well, extreme weather events can be expected to disrupt markets and infrastructure. Particularly vulnerable is infrastructure located near coastlines, such as oil refineries, nuclear power plants, and port facilities. One of the predicted effects—increased flooding—will affect infrastructure as well as transport routes.

5. Competitiveness Impacts[1]

39. The UNFCCC and its Kyoto Protocol may be agreements focused on an environmental problem, but they are fundamentally economic treaties, seeking at their base to reorganize the way the world consumes and produces goods and services. As such, it is not surprising that for many countries, the competitiveness impacts of the agreements are important.[2]

40. The basic concerns are of two types. First, there is the prospect that a country that takes strong climate change measures may put its firms or sectors at a disadvantage relative to their foreign competitors in countries that do not take such strong measures. This may lead to the "leakage" problem, where strong regulations simply cause offending firms to relocate to other jurisdictions. Second, there is the concern that even among those countries taking strong action, Parties may create unfair competitive advantages for domestic industry by the manner in which they implement their climate change policies.

41. There has been a fair amount of analysis on both topics. On the first, most analysts find that there are competitiveness impacts associated with environmental regulation, and that in most cases they are moderate, but not in all cases. Sectoral characteristics matter; for example, it matters how energy-intensive the sector is, what is the state of technology, and to what extent firms are able to pass along cost increases to customers. The form of regulation also matters.

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[1] This section draws heavily on Aaron Cosbey and Richard Tarasofsky, "Climate Change, Competitiveness and Trade." London: Chatham House. 2007.

[2] Competitiveness at the level of the nation state is not a particularly meaningful concept, leading to the false impression of a zero sum game in international commerce. Throughout this discussion we refer to competitiveness at the *firm* or *sectoral* level.

42. On the second, the EU's emissions trading system can be seen as an obvious case study. Here, most analysts find that there may be potential for significant impact in the longer term, under very ambitious targets, and in some sectors (steel being a possible example), if higher costs of electricity production can be easily passed on from utilities as higher prices. But even then the unevenness of the playing field among EU countries is likely to be relatively low, and along the lines of existing differentials driven by the traditional constituent ingredients of comparative advantage. At least in the medium term, this competitiveness problem seems to constitute a lesser cause for concern than the first type.

43. The factors that matter in determining the extent of competitiveness impacts need to be considered three levels: at the level of the firm, the sector and the nation. At the firm level ability to innovate is key. At the sectoral level energy intensity, opportunities for abatement and ability to pass along cost increases are important. At the national level—where there may be the greatest potential for government policy to address impacts—the scope and distribution of burdens is determinative, as is the final form of the regulation. A number of complementary policies need to be considered, including those aimed at competitiveness more broadly. In the final analysis, the most effective action at the national level in diffusing competitiveness concerns may be the conclusion of a multilaterally agreed framework for long-term action.

VI. Concluding Thoughts

44. This paper has surveyed the broad linkages that connect trade, investment and climate change, looking at how trade policy might impact on climate change through its economic transformations, at how the legal instruments in the two areas interact, how climate change might impact the physical infrastructure on which trade depends, and at competitiveness concerns. The objective of this sort of survey of issues is to identify those areas where there may be a need for further actions.

45. As a general proposition there seem to be few inherent conflicts between climate change and trade policy, and the paper identified a number of ways in which they might be mutually supportive. The paper produced as a follow up to this one will go into greater depth on several promising areas where trade policy might further efforts to address climate change challenges.