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Climate Change Policies and the World Trading System

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The current architecture for global policy making rests on the Bretton Woods institutions: IMF, World Bank, GATT and now WTO. These institutions were designed for interactions between countries that did not involve the physical linkages that have been growing since the early 1960s from local (pesticides) to global (thinning of the ozone layer) concerns. These externalities are now increasingly transborder. Because States are sovereign, the problem of allocation of property rights to internalize them cannot be solved by adjudication as in the case of national externalities so the conflicts over trade policies and over environmental policies, particularly those on mitigating climate change is reflecting the relative power of parties involved. Nowhere is this clearer than in the current climate and trade negotiations.

.../... So far, the 'narrow but deep' architecture under the comprehensive Kyoto Protocol (KP1-2008-2012) has delivered little with Green House Gas (GHG) emissions growing as much as they were predicted to rise in the absence of the Treaty. With negotiations stalling, countries are now pledging unilateral emission cuts confirming that we are switching from a 'top-down' to a 'bottom-up' approach to deal with the climate change challenge. As a result, the negotiations are now drifting towards what Keohane and Victor (2010) call a 'Regime Complex' (as opposed to the comprehensive regime envisaged under KP1).

In response to these challenges, FERDI and IDDRI hosted a one-day conference in June in Paris "Climate Change Policies and the World Trading System: The Challenges Ahead" to address the role that trade and trade policies might play in meeting the climate challenge. Borrowing an expression coined by Jagdish Bhagwati when discussing the relation between regionalism and multilateralism in the international trading system, the conference addressed the theme: can a suitably modified trading system take on the climate challenge, i.e. how can it be a building block rather than a stumbling block in our quest to control global warming?¹

Issues addressed at the conference covered four areas involving trade directly or indirectly. First, how can one bring expanded participation in the effort to curb GHG emissions. Second, because global change is a long-term problem and GHG emissions stay in the atmosphere for over

a century, how can one design emission targets and a time-path for the price of carbon for a long-enough time-period with enough certainty. Third, the political-economy aspects of the choice of mitigation policies rather than their efficiency will largely determine whether or not they are adopted. This implies that one way or another, the new architecture will rely on some form of carbon-credit-trading systems (CCTS) across regions and countries as a way of tackling the joint objectives of efficiency and equity in the sharing of efforts to curb emissions. Fourth, how should the institutional framework dealing with trade in a world where physical linkages across countries are increasing evolve to better accommodate the challenges posed by climate change and water scarcity, another public good.

► 1. Expanded Participation.

Greater participation in curbing emissions has to extend beyond industrialized countries. First, this will increase the efficiency of emission cuts as the greatest gains are to come from cuts in low-income countries that will also account for the bulk of emissions. Extended participation will also lead either to greater cuts by developed countries or, in the increasingly unlikely event of a Treaty with binding caps, to greater pledges. Last but not least, expanded participation will limit leakage. However, inducing participation in the context of climate change is extremely difficult because a clean atmosphere with a limited rise in temperature is a Common Pool Resource (CPR). It is thus near-impossible to exclude non-participants from enjoying the atmosphere which is degraded by use. As is well-understood, actions to cope with a CPR face a very serious collective action problem because a CPR is not self-managing even if one has credible information about costs, benefits and options. Currently with the continued uncertainty and

1. The conference papers are forthcoming in a mini-symposium issue at The World Economy and available at <http://www.ferdi.fr/en/events/Paris%2C-Maison-de-l%27Am%C3%A9rique-latine%2C-24-June-2011---International-Conference-internationale-organized-by-Ferdi-and-Iddri.html>. Many observers are warning that the objectives of reducing GHG emissions will collide with the non-discrimination principles enshrined in the GATT (Brainard and Sorkin (2009), Messerlin (2010), Hufbauer and Kim (2010), Horn and Mavroidis (2008).

differing interests, to tackle the collective action problem, incentives need to be re-aligned.

High trade volumes under an open trading system do improve the odds of voluntary participation in a climate deal as countries that abate will benefit indirectly because of the positive terms-of-trade effect of their emission reductions. This is because as a country reduces its consumption of a traded good, it will improve its terms of trade. But this is a secondary effect and no country (not even large emitters) would unilaterally participate in a global deal as shown in suggestive simulations from global trade models (Cai et al.(2009)). It is therefore difficult to escape the conclusion that under the present estimates of damages associated with a business as usual (BAU) growth scenario, countries will lack incentives to participate in a cooperative agreement to protect the atmosphere. Even for large countries that can internalize a larger share of their mitigation costs, the benefits from the resulting improvements in global climate largely accrue elsewhere. Side-payments to induce participation and/or realignment of incentives are thus needed.²

Since countries will continue to trade, can trade measures exert leverage? For example, would the threats of bans or of border adjustments induce countries to participate in emission-curbing climate negotiations be credible (this argument is different from the level-playing-field argument which calls for border adjustments as a control rather than a sanction)? Here it is tempting to draw a parallel with the relative success of trade sanctions under the WTO when there is non-compliance and countries try to improve their terms-of-trade. However, this

terms-of-trade externality is an easier challenge to solve than the one posed by GHG-related externalities.

In the case of international trade treaties, enforcement by a strategy of reciprocity is likely to be effective as the harmed country can choose the punishment to get maximum effect precisely because trade is bilateral. By contrast in the externality due to GHGs, as emphasized by Barrett in his communication, there is very little reciprocity to be targeted to countries that violate the rules as the punishers harm themselves in the process. Moreover, punishment works only for non-compliance, not for non-participation. If a country drops out of a climate treaty it continues to benefit from the efforts of others whereas a country that leaves the WTO loses the benefits of membership. This is the main reason why Barrett argues in favor of a portfolio system of Climate Treaties as sanctions could be better designed to remain targeted to the sector in the treaty, though they would be subject to the kind of lobbying activities described by Mathys and de Melo (2011) in their contribution.

In his contribution, Whalley argues that trade can only contribute marginally in advancing negotiations under the United Nations Framework Convention on Climate Change (UNFCCC) process. He notes, however, that the linkage between trade and climate policies is growing and that this expands the bargaining set to reach an agreement. He cites the example of China, still heavily dependent on export growth. China may be willing to undertake mitigation policies in return for security of access to OECD markets (now the bargaining is separate being carried out under the UNFCCC for mitigation policies and under the WTO for market access).

2. This need for side-payments to participate is distinct from the equity issue on splitting the costs of abatement between rich and poor countries to take into account that, so far the stock of GHGs accumulated since the 1980s when global warming became an issue comes from industrialized countries.

▶ 2. A Time-path for the Price of Carbon

Establishing a credible time-path for carbon is tricky, yet necessary to tackle the climate change challenge if only because many investment decisions, notably in construction, last for periods of over fifty years. These long-term decisions require a predictable time-path for carbon so that it is sufficiently profitable to invest in low-carbon technologies. As argued by Mathys and de Melo, this has been the case under the cap-and-trade system to reduce acid rain in the US where permits were extended for thirty-year periods, but not in the EU emission trading system (ETS) or under the Clean Development Mechanism (CDM) under the Kyoto protocol. Even if targets were to start from business as usual (BAU) levels and were to become increasingly stringent while being sufficiently flexible, one is still faced with the possibility of dynamic inconsistency as current political leaders cannot credibly bind future political leaders. A credible time-path for carbon will also be a prerequisite for the R&D necessary to develop green technologies. While the R&D may yield private benefits if the international trading system provides sufficiently strong Intellectual Property Rights (IPRs), the development of green technologies is likely to diffuse widely so incentives to free ride will be important.

Because of the uncertainties about the benefits and costs of abatement over time, agreements will have to be renegotiated in the future giving rise to strategic behavior that will reduce the efficiency of the agreements. Countries are likely to invest less than optimally in R&D to improve their future bargaining power. To mitigate this tendency to under-invest in R&D, investment in R&D could then be subsidized directly though, as pointed out by Messerlin in his contribution, a priority for global governance relat-

ing to climate change, is to draw a sharp distinction between 'good' and 'bad' (subsidies for fossil fuels) subsidies. These subsidies would have to be applied at the international level since each national government does not perceive its own chosen investment level as being too low. Subsidies, however, would raise the problem of verification. If the international trading system functions smoothly, this verification problem could be alleviated as countries receiving subsidies would export their abatement technology to other countries which would be easier to verify. As put by Harstad (2008), countries would all benefit by collectively removing tariffs and adding subsidies on solar panels while at the same time enforcing property rights for these technologies. Finally, as we are shifting away from a 'top-down' approach with binding targets towards a looser form of agreement where the goal becomes price-harmonization among major emitting nations, the time-path of the price of carbon is likely to move to center-stage.

▶ 3. The Political-Economy of Market-based Mechanisms

There is agreement that there is no way to escape from the objective of moving towards a unique carbon price over the long term. While there is general agreement that a carbon tax would be preferable to alternatives (e.g. Cooper (2008), Nordhaus (2008)), others have argued that a cap-and-trade system is more feasible politically (e.g. Karp and Zhao (2008), Tirole (2009)). In their contribution, Mathys and de Melo review the economics and political economy implications of both approaches, noting that some form of linkage between diverse national climate policies under a 'bottom-up' approach will prevail as they should help towards global convergence in carbon price. Drawing on the limited experience so far, they observe that ef-

efficiency objectives will be largely impeded by the sheer magnitude of the rents up for capture and that extensive rent-seeking has taken place under the existing cap-and-trade (CAT) systems.

The market-based mechanisms tried out so far are Joint Implementation (JI), the Clean Development Mechanism (CDM), but also the EU Emission Trading Scheme (ETS) to allocate trading rights across EU members. All these market-based instruments have been criticized but will likely subsist under a yet to be determined form under the new architecture when KP1 expires in 2012, if only because of political-economy considerations. The Tirole report (2009) is doubtful of the efficiency of the CDM (high transaction costs, difficulty in measuring 'additionality' and perverse incentives in beneficiary countries) preferring the JI as a means to achieve a single price of carbon. In the end, a cap and trade (CAT) system such as the EU ETS has the great advantage of dissociating the implementation from a control system (by the market) from the decision about the level of the cap if the "independence property" of the level of the cap holds, that is if governments who allocate the licences are cost-minimizers. The issue now is how to improve on the current possibilities for linkage of what will be a diverse set of national policies (Olmstead and Stavins (2010), Metcalf and Weisbach (2010)). Equally, if not more importantly, these carbon-credit-trading systems (CCTS) provide a way to transfer funds from industrialized to developing countries. Under the assumption that progress from the much-preferred alternative of a carbon tax will not be adopted, it is difficult to escape the conclusion that some form of a CCTS to dissociate where emission reductions take place from who pays will have to be adopted. This is because will be difficult to find a politically acceptable way for rich countries to transfer funds for mitigation and adaptation

to poor countries (viewed as compensation by recipients for past emissions rather than aid).

► 4. Border Adjustments and the International Trading System

As pointed out in the introduction, the current international trade and finance framework centered around the Bretton Woods institutions and the WTO was not designed to take into account the growing physical linkages between countries. Trade specialists are alarmed that climate negotiators seek to impose limits on trade entirely outside the WTO process in order to control the flow of carbon and price products with a high carbon content accordingly. Climate change specialists on the other hand, fear that international trade will undercut policies to reduce GHGs. Both are appealing to the WTO for rescue. It is difficult to imagine that pressures for border tax adjustments will disappear if the negotiations move away from the top-down binding global agreement to small-group agreements because emission intensities vary greatly across countries. Trade policy should then discriminate more by country than by product with higher barriers against countries which are the source of high emissions raising tensions at the WTO which is based on the principle of non-discrimination. In their contribution, Horn and Mavroidis (2011) review WTO Appellate Body case law on environmental issues that would be relevant for conflicts relating to climate change mitigation policies. They conclude that under current rules, there is likely to be much leeway to impose border tax adjustments.

Messerlin also warns of the looming water scarcity, another public good, that will hit us before climate change and will face the same vested interests when trying to solve their common problem of free-riding. With countries pur-

suing different water policies, trade in 'virtual water' will put the same pressure on the international trading system as trade in 'virtual carbon'. Reflecting on the pressures for protection measures, he suggests an international architecture with three institutions built around the WTO rule of non-discrimination but complemented with WTO rules modified to fit the specificities of the climate and water communities (e.g. a new definition of subsidies) and specific provisions that have no equivalent in the WTO (pricing guidelines to avoid quota-based management).

If the perception that the scientific evidence becomes alarming (e.g. the disappearance of the Arctic glaciers in the next few years), it is possible that the Climate and trade might be integrated into a World Environmental Orga-

nization (WEO), not to mention an institution to deal with water, a more pressing problem than climate as pointed out by Messerlin in his communication. Ultimately such a merger would require a great deal of complex negotiations on international investment, border tax adjustments and embedded carbon and Messerlin outlines the 'friends' and 'foes' facing such a new institutional development. In the meantime, it is likely that the current complex of regimes will continue to subsist because the patterns of interests will not converge enough for a single institution to develop with no rivals as was the case with the GATT where the private benefits from the regime were large and easily extended via the norms of MFN and reciprocity.

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