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A Global emissions trading scheme

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One-hundred word summary

Our economic competitiveness would best be safeguarded by a multilateral regime that guaranteed the competitive neutrality of global emissions controls. This regime should be in the form of a contract among governments, possibly outside the UN, that extends to control of existing and future regional and national emissions markets. It should set caps on emissions rather than implement a global ‘target’; it should prescribe minimum rules for efficient markets but it should leave substantive controls in the hands of national or regional authorities. Although the marginal price of emissions should be the same everywhere, markets should price emissions locally.

Summary

This submission concerns the lessons we should draw from historical multilateral economic and emission-control agreements when considering the nature, scope, membership, objectives and mechanisms for a future multilateral agreement to control emissions by, among other things, making emission-licenses tradable. It does not deal with an important related area for multilateral cooperation: adaptation to climate change.

Australia's 'competitiveness' as a hydrocarbon-intensive economy (production and trade) can be protected in the long-run only by technological change. But it is crucial in the meantime that laws and regulations on emission controls that shape international markets for energy (and emissions) have neutral competitive impact on different sources of emissions. We also need to consider whether international rules on the use of subsidies for adaptation projects are feasible.

The successor of the Kyoto Protocol will be created in a complex multilateral environment of existing treaties and markets, many of which will continue to operate in parallel to the new multilateral framework. We can draw some lessons from the international trade regime about the likely shape of that complex regime of overlapping treaties.

The global framework should be intergovernmental; it should provide certain guarantees about the characteristics of the national or regional regimes that create tradable emission-rights and about the regulation of markets that trade in those rights. It should provide mutual rights and obligations that are enforceable through a disputes mechanism; it should not rely on notification and verification procedures but, instead, should ensure that governments have built-in incentives (e.g. revenue) to comply with the provisions of the framework agreement on market regulation.

A future framework agreement must incorporate the UNFCCC principle 'common but differentiated responsibility' for emissions control that is now, probably, settled international law. There are important lessons from the international trade framework on what 'differentiation' should mean in practice.

It would be futile to attempt to base future allocation of emission-rights on the apportionment of global emission targets. But the use of 'caps' as a non-targeted means of defining emission rights has an encouraging history. 'Caps' used to define emission-rights are very different, in practice, from an apportioned target and much better adapted to the uncertainties of mitigating climate change. The McKibbin-Wilcoxon proposals for a hybrid endowment/license trading system are well adapted to this purpose.

Global agreement the biggest challenge

*** Weakness in the international politics of climate-change management is much more likely to derail global efforts to mitigate or adapt to climate change than weakness in international science or technology.**

Centuries of accelerating scientific advance gives us some confidence that with the right incentives science will continue to improve our understanding of climate-change, and of means to halt human-forcing and improve adaptation to its unavoidable impacts. But the past century also shows us that technologies for building durable, enforceable multilateral regimes for collaboration on global challenges have not improved much.

Multilateral regimes are increasingly fragile and contentious. The record of both formal and informal multilateral collaboration since 1945 contains occasional successes but is littered with dispiriting failures. Even efforts on behalf of even the most fundamental objectives such as those in the UN Charter's promise to keep the peace, uphold human dignity, justice and respect for international law have a puny record.

The **scope for cohesive global action is shrinking**, especially in regimes with economic objectives. For most of the post-World War II period, developed countries successfully collaborated on a wide range of economic policy issues, coordinated through the OECD and the “Bretton Woods” institutions. By the early 1990s the collapse of the Soviet Union led to a divergence of interests among this group that softened the imperatives of collaboration. In the first and second decades of the new century, international collaboration in economic regimes will be shaped by another set of interests; those of the world’s largest economies measured by output and by population that are still in per-capita terms poor countries. The dispersion of interest will inevitably soften global economic collaboration still more.

Against this discouraging background, governments face a uniquely difficult decision in dealing with climate change because it requires **global precautionary action** on a scale that has never been seen. Precautionary measures are difficult to design and legislate within an economy let alone in a multilateral framework because they commit resources now, to a purpose whose value is not (yet) known accurately. This guarantees some contention about priorities for the use of public resources. But in a global setting, collaborative precautionary action is dauntingly difficult. Even if every government had the same priorities and the same resolve and capacity to act, neither current resources—for investment in green-house gas (GHG) reduction or adaptation to unavoidable change—nor the future threats and opportunities—such as impacts on food production or sea levels or disease control—have the same value everywhere. A ‘cost-benefit analysis’ with the same inputs would produce **different results in different settings**. This, ultimately, is an explanation for the reluctance of developing countries to accept substantive obligations on mitigation of climate change (and their inaction on adaptation) that has persisted up to the latest (Nairobi, 2006) meetings of the UNFCCC COP.

There is one further reason to be pessimistic about wide adherence to a multilateral regime that proposes global action: the risks that might motivate collaboration seem ‘exotic’ and may not be accurately assessable for many years leaving an enduring question-mark over the scale and urgency of action that could demand monumental resources to mitigate the problem. Even as the scientific assessments of climate change move toward stronger consensus on forcing, **the usual techniques of economic policy analysis fail to produce consensus** results on the appropriate degree of mitigation.¹ In a domestic environment, many precautionary actions on issues such as public health avoid detailed cost-benefit analysis; action is predicated on assessments that are qualitative and ‘political’ because, ultimately, the decision-makers are constitutionally accountable. But the same fall-back is not available in multilateral regimes where the idea of ‘leadership’ left the stage several decades ago.

Despite these serious doubts about the international capacity or will to act collaboratively on the mitigation of climate change, we have no choice. The atmosphere is pre-eminently a ‘global commons’ and must be managed by governments by collaborative action. To succeed, those actions must be pursued through a regime that is more effective and durable than the majority of multilateral regimes negotiated in the past 50 years. At the very least, a global regime adopted when the Kyoto Protocol expires in 2011 should be very different from the Kyoto Protocol.

¹ There are several vigorous and continuing disputes among economists on many aspects of the IPCC assessments. But still more crucial are those surrounding recommendations on mitigation, especially the choice of ‘discount rates’ in inter-generational cost-benefit analysis. Part B of Nicholas Stern’s Report to the UK Treasury defends his choice of a discount rate of 1.4% that values risk at least three orders of magnitude higher than would a ‘typical’ discount rate. Stern’s choice is criticized but, for subtle reasons, not ultimately rejected in a widely discussed review by Weitzman (Weitzman, Martin L “The Stern Review of the Economics of Climate Change”, Journal of Economic Literature (forthcoming)). William Cline has also engaged the point with great clarity, coming down closer to Stern than to Weitzman in his controversial paper for the Copenhagen Consensus (www.copenhagenconsensus.com), especially in replies to his critics (Cline, William R., “Meeting the Challenge of Global Warming: Reply to Manne and Mendelsohn”, Copenhagen Consensus Paper, May 2004)

How to "protect Australia's competitiveness"

We can best protect Australia's economic competitiveness by two different actions that are, however, related.

- * We should ensure that the like controls apply to like emission circumstances everywhere and we should aggressively support the development of technologies that reduce emissions from hydrocarbon use on different scales at low cost.

These two actions are related by the preferred sequencing: agreement on equitable international emission rules in the next few years is likely to provide the best environment for the emergence of new technologies over the next few decades.

"Competitiveness" means two different things

"Competitiveness" is not a very useful way to rank policies because it *is a characteristic of individuals and firms, not governments*. In practice, it unpacks into at least two different 'tenses': a static comparison between economies ('competitiveness rankings') and a dynamic 'competitive outlook', which is a kind of 'managerial' term for the economic prospects for an economy. But even when unpacked, the idea of 'competitiveness' really applies only to firms operating in an economy, rather than to the economy itself. States are sometimes said to "compete" in a mercantilist trade policy framework, for example when they offer subsidies on production of exports or they subsidize foreign investors or (it amounts to the same thing), competitively raise import duties or depress exchange rates. But these policies are not typical of modern states whose more characteristic role is to coordinate actions by competitive firms and by individuals (including the non-competitive and the altruistic) within their own territories and to foster cross-border collaboration via trade, investment and intellectual property protection policies.

(1) "Static" competitiveness depends on neutrality of emission controls and subsidies

The best construction that can be put on economic 'competitiveness' is that a 'pro-competitive' government acquires public goods and achieves social goals while putting the least restrictions on the operation of a competitive market within its borders. That is the sense of 'competitiveness' that is measured by the global rankings published by the World Economic Forum ([World Economic Forum - Global Competitiveness Report](#)).

In 'competitiveness rankings' this amenity for competitive firms is typically a mixture of least-cost regulation and optimum support for private competitors from public infrastructure, education and secure property rights. So what we mean by policies that 'protect Australia's competitiveness' in this static sense are policies that (other things being equal) impose the least costs on firms operating in Australia and in other markets. In the context of emission control policies this means ensuring, principally, that the emission 'penalties' that apply in Australia to our energy exports and domestic energy use e.g. for minerals processing are no more onerous than those that apply to energy use and energy export profiles under the same circumstances elsewhere in the world.

- * Coordinating policies internationally to ensure that 'like' emissions controls and incentives apply in 'like circumstances' in every economy best protects our 'competitiveness' in the short run.

This is a crucial 'level playing-field' rule. It would mean ensuring, for example, that the **same degree of control** applied to **all CO₂-equivalent emissions** in **similar circumstances**—not evaded by exceptions or increased by 'historical responsibility' or segregated by purpose—in **every country**. In an ideal agreement a 'like controls in like circumstances' rule would be complemented by an 'equivalent subsidy' policy applied, for example, to the development of carbon-sparing technologies that applied to hydrocarbon combustion (e.g. carbon sequestration techniques) or to the development of alternative, non-carbon energy sources.

Subsidies are likely to have a significant impact on the 'competitiveness' of future business environments because many governments will offer subsidies in support of adaptation to climate change, for example for the development of new agricultural production methods or new civil engineering projects for hydrology or

coastline protection or the development of more habitable regions. Even if we ignore those subsidies that will fund projects to offset natural *disadvantages*—such as the inundation of low-lying coastal zones—the scale of potential expenditures on these projects and their economic scope suggests that they could play a major role in shaping the location of investment and production in the future.

It may not be possible, however, to devise multilateral rules to limit the impact of adaptation subsidies on "competitiveness"; the only existing rules—the GATT/WTO rules on the use of production subsidies for tradable industrial, resource and agricultural products—do not apply to 'generally available' subsidies of the sort that are likely to fund adaptation programs. No multilateral investment agreement exists; but the negotiation that came closest to conclusion, the OECD's 1998 Multilateral Investment Agreement, did not include effective controls on the use of subsidies to attract foreign investment.

To the extent that enforceable obligations on governments to use 'like controls' and to minimize subsidies are adopted and subject to multilateral surveillance, firms responsible for Australia's production profile (heavy in hydrocarbons) will remain competitive with firms in every other economy who will face the 'like' controls. Other things being equal—and discounting the impact of adaptation subsidies on infrastructure amenities for firms—our national 'competitiveness' in the static sense of the "Davos" rankings will be unaffected.

✿ A 'like controls in like circumstances' principle would safeguard Australia's trading interests—and those of our hydrocarbon customers—against endemic demands for 'green taxes' on imports from perceived 'weak' emission control regimes.

In Europe, especially, there has been growing demand to impose '**border adjustments**' on imports from economies whose costs of production are said to be lower than European costs of production due to higher emission control costs on Europe. In my view it would be possible for the EC to defend such import duties under Article XX (g) of the GATT, if they were proportionate and non-discriminatory and (especially) if they were shown to be necessary for the efficient functioning of the ETS.² This threat will grow as more countries (the USA) implement emission controls. The best way to insure against such 'adjustments' is to create a global regime that defines what degree of control is 'equitable' (and by extension, non-injurious to domestic trading schemes). A 'like controls in like circumstances' principle would be such a provision even in the absence of any stipulation of emissions volumes or controls-costs in a particular country. The GATT dispute settlement **Panels and Appellate Body are much less likely to endorse 'exceptional' protective action** under Article XX where a global agreement along these lines exists.

(2) "Dynamic" competitiveness depends on technological progress

✿ The maintenance of Australia's competitiveness in a 'dynamic' sense can be achieved only by technological means, not by global agreement on equitable controls.

Our economic outlook is clouded by the prospect that the so-far un-priced negative externalities of carbon production—on which our national production depends more heavily than that of any other country (measured *per capita*)—will have to be internalized. The value of our exportable low-emission energy resources (e.g. uranium) would be expected to rise, but this would probably not offset the devaluation of hydrocarbon resource endowments. Many other low-emission power sources are effectively non-tradable (wind, solar).

The only hope for escaping the 'competitiveness' penalty of our hydrocarbon resource dependence in the long-run is to **lift the demand for hydrocarbons at every price for any given level of emissions**. That is, by moving the hydrocarbon demand curve out from the origin rather than sliding down it as the price rises due to imposed emission controls.

Demand curves relocate to higher volumes of demand at any price in response to changes in (among other things) technologies: in this case a technology that reduces the volume of emissions per volume of

² The EC Trade Commissioner, Peter Mandelson, has so-far avoided pressure to respond to the demands by arguing that 'incentives' to developing countries (or Australia or USA) to control emissions are more appropriate than taxes on imports.

hydrocarbons (carbon sequestration, emission 'scrubbing' etc). As emission controls are imposed, the introduction of these technologies at a price that is less than the price (for our customers) of moving to other sources of energy is the only means by which Australia's 'dynamic' competitiveness can be maintained.

Sequencing of actions to safeguard 'competitiveness'

The sequencing of actions to safeguard Australia's competitiveness will probably be determined by the time needed to develop and commercialize appropriate emissions-sparing technologies for hydrocarbons. But the incentive to invest in the development of these technologies would be undermined by a prejudicial regime for hydrocarbon trade that e.g. favored LNG over coal. So competitive neutrality between hydrocarbon energy sources and uses is a crucial immediate requirement for any global regime.

A global agreement to reduce GHG emissions

Membership

* The membership of a multilateral organization/treaty that controls GHG emissions and emissions trading should be open to any government that is a member of the UN or controls a customs territory.

This is the most inclusive definition possible without including provincial governments (do not control customs territories) or excluding Members of a customs union (e.g. the European Community). It has the effect, also, of including the European Communities as a potential member independent of the participation of EC Member States.

The disadvantage of this membership rule is that consensus among 180 (and more) countries is extremely difficult to achieve and is associated with high transaction costs (large and/or numerous meetings, ponderous information exchange arrangements, lengthy 'discovery' processes, slow verification cycles). But since any organization will inherit the mantle of UNFCCC—or will be UNFCCC—and since global coverage is necessary to guard against 'free riding' in the management of climate change, there is no desirable alternative to universal membership.

Form

* The simplest, most effective form of agreement is a single inter-governmental treaty in the form of a binding contract among member governments that is enforced by joint action.

A 'contract' has the advantage of scaling well: it works in the same way whether there are two or two hundred parties since it mediates an exchange of rights and obligations among its membership. A 'contract' also has clear terms of accession: acceptance of an equivalent level of obligations by every member.

Since production and consumption of energy and trade in energy resources is pre-eminently a private activity, an inter-governmental treaty that excludes private interest representation needs some justification. The GATT/WTO has struggled with this problem for decades without changing its strictly intergovernmental character (because its members don't want to). The UN ECOSOC and some of its dependent or associated agencies (ILO, WIPO), provide civil society organizations, including firms, a status and presence in deliberations independent of government members. Although each arrangement has costs and benefits, it is crucial that a global emissions-control agreement creates defined and enforceable international rights and obligations for members. Without such rights there cannot be effective enforcement. It is a settled principle of customary international law and the jurisprudence of international courts that **only states have an international personality of the kind to which such rights and obligations attach**. Innovations are always possible, but at a cost that includes the loss of clear guidance from existing law and practice.

The 'consultative' benefits of a 'mixed' membership/structure can be achieved in other ways: for example by appointment of individuals nominated by appropriate civil organizations (business forums, NGOs etc) to panels with technical mandates or advisory roles. Also, governments always have the right to choose

whomever they wish as members of their own delegations or to include information or recommendations from whomever they wish in their own submissions.

Structure

Universal membership and a single forum is the most legitimate way to make decisions about common resources; it also makes 'free riding' more transparent. But:

- * The structure of any future global emissions-control and trading regime will be complicated by the need to integrate existing agreements, at regional or 'provincial' level because governments have created **property rights within each existing trading system** that they may be unwilling to resume or see revalued by a global trading system.

Bottoms-up 'docking' of regional or bilateral emissions-control or trading treaties

Some regional emissions trading schemes now exist in developed countries. Increasing participation in emissions-controls by developing countries e.g. under an extended Kyoto –style framework, could see the development of new regional emissions markets including in developing countries. It is unlikely, however, that such trading schemes would ever be integrated in a single, integrated global emissions framework.

Experience with attempts to aggregate regional trade agreements confirms that it will be impossible to 'build up' to a global agreement on climate change mitigation by *integrating* bilateral or small plurilateral agreements. The impediments in the trade and climate change contexts are analogous. **Governments** managing bilateral or regional trading agreements negotiated in the expectation that members will have no control over—or regard to—the price or volume of emissions outside the region **will likely not accept global pricing of the assets/liabilities in the regional market.**

Both governments and private interests in different regions will place different values on emissions (and, by construction, on the threats of climate change) e.g. in relation to 'development objectives'. A non-discrimination obligation imposed on a regional market will re-price local assets and liabilities in accordance with global market values that, especially in the case of developing countries, will not coincide with local values. Rather than accept global prices for local assets, **governments will defect from a non-discriminatory global emissions-control framework**, as they have defected from the non-discriminatory global trade regime to regional trade agreements, because—in a realist analysis—those are the only prices (values) that really matter to their political survival.

The lesson from the management of multilateral-*versus*-bilateral trade regimes is that any future global emissions regime that seeks to impose the 'like controls' on emissions in like circumstances everywhere *must* be structured to accommodate local pricing of the traded assets/liabilities. Such local asset pricing is, however, consistent with global emissions control objectives because **only marginal prices affect the expansion of emissions.**³

Two-speed (or 'multi-speed') global treaties

Not dissimilar in concept to AP6, this approach would rely on achieving agreement among the 20 (or so) percent of economies that account for 80 percent of emissions leaving the obligations of the rest of the world un-stated or unchanged.

Among a smaller group -- in theory -- it should be easier to negotiate an ambitious agreement with 'global' trading provisions that could later be extend to other countries on the same or on a 'differentiated' basis. The Montreal Protocol on Substances That Deplete the Ozone Layer, for example, began as an agreement among developed countries (in 1987) that was subsequently extended to developing countries on a differentiated

³ One of the great strengths of the McKibbin-Wilcoxon proposal is that *all* emissions markets in this scheme are local. The only 'global' price is the fixed *marginal* price of emissions permitted by the annual licenses.

basis. The 1970s GATT "Codes" (the 'Tokyo Round codes') created mutual obligations and rights among one set of Members that was effectively different from those applying among a second, broader, set that included the smaller trading economies.

'Equity' questions aside, experience shows that **there are two serious flaws in the 'two-speed' approach**. The first is that restricting the number of 'core' participants does not necessarily make agreement easier to reach. A smaller collection of states with the most acute interest in managing emissions merely collects in one room those most likely to have divergent views for which they will fight. This was the experience in the 1987 Montreal negotiations, for example, where the United States and EC (lead by the UK) fought bitterly over CFC restriction objectives (between 95% reductions proposed by the USA and a 'freeze' proposed by the EC) eventually reaching a 'target bargain' that had doubtful value.⁴

The second flaw is that the global distribution of emissions will change over time, leading to continuing churn in the membership of the 'core'. In fact, creation of 'core' and 'non-core' obligations will accelerate changes in ranking of states at the margin. States initially in the 21 - 30th rank will rise in the ranks given they have 'non-core' obligations. States in the 'core' will fall in the ranks etc.

Multiple overlapping treaties

✿ A global framework agreement that accommodated existing emissions markets could establish principles of competitive neutrality for controls on hydrocarbon emissions and procedures for limiting emissions growth while allowing the price of emission allowances to be set—as seems inevitable—at a national or regional level.

Considering the multiple overlapping treaties that now govern international trade flows and the large network of bilateral investment treaties, aviation treaties and taxation treaties, it seems very likely that there will be multiple, overlapping emissions-control and emissions-trading treaties in the future, grouping economies that have other integrating treaty relationships or shared regional valuations of climate change and carbon emission. It is very likely that the ETS will continue; that there will be regional agreements among governments in other geographical regions and it is possible that provincial governments in federated states such as the United States and Australia will retain specific emissions trading agreements. It is also likely that China and India (Vietnam, Pakistan, Indonesia) will find more in common with each other in the relative valuation of carbon-emissions and the threats of climate change than with Europe, Australia or the United States. These countries may be willing to accept restrictions and to price emissions in a trading scheme. But that does not mean that they want to adopt a global price for the tradable assets in any scheme.

Could these treaties taken together, without specific reconciliation of their differences or 'integration', add up to an effective global regime?

Most regional and bilateral trade agreements can be explained only in terms of foreign policy (or geo-strategies) since the net benefits in terms of additional trade or investment flows turn out to be small or hard to distinguish (if they exist)⁵. In some cases the regional trade treaties have contributed innovations that have made their way back into the global regime. But they are fundamentally 'parasitic' on the WTO's global 'level playing field'; employing the same concepts, rights and obligations (extended in a discriminatory manner) and relying on the global regime to provide a stable framework of extra-regional trade in which the 'bubble' created by the regional treaty 'floats'.

Although there is little evidence so far that the inconsistencies between the regional trade agreements and the non-discriminatory global regime have 'damaged' the global framework or undermined its credibility (every government still seeks to join WTO) there is a danger that national policy attention has shifted away from the

⁴ Sunstein, C op.cit.

⁵ The aviation treaties, which exchange defined assets, are a different case

inherently complex global negotiating forum to the less challenging regional frameworks, reducing the pressure for simple market liberalization in favour of the 'bounded' liberalization that can be created inside a discriminatory FTA.

It's easy to imagine that multiple, overlapping emissions-trading agreements with a variety of mechanisms (e.g. cap-and-trade, zero-emissions-by-sector, emissions-reduction development assistance treaties) would pose analogous dangers for a global emissions-control framework. The drafters of a global framework treaty would face an impossibly complex task to define the reciprocal exchange of rights and obligations among members at a global level if they attempted to integrate the specific provisions of a tangle of overlapping regional engagements.

But the co-existence of the WTO and regional trade treaties suggests that, **if we abandon the temptation to integrate regional arrangements** via e.g. non-discriminatory access to trading-rights in each regional market (by analogy with the discrimination in regional trade agreements) but focus, instead, on setting some globally applicable rules related to the objectives of emissions-control and minimal procedures for efficient markets, **an effective global emissions-control and trading regime could emerge** from the combination of a global framework and multiple, overlapping, regional emissions markets. It's just that the 'assets' in each regional market would be created by local restrictions and priced in local markets, whether national or regional.⁶

The global framework agreement would impose obligations that were enforceable among the members by virtue of their participation in the contract. Among these obligations, the most important would be the 'like controls in like circumstances' rule and some criteria for establishing the 'market-making' restrictions that should establish equity on a procedural basis but not necessarily a defined level of emissions. For example, it should impose a cap, but not the same cap everywhere in accordance with the 'common but differentiated responsibility' principle.

Location

It is not yet clear where a future framework agreement, replacing the Kyoto Protocol of the UNFCCC, would be located. There are good reasons to move it out of the UN's reach, but there are advantages in 'continuity', too.

There will be **strong demand to retain the UNFCCC** as the location of a post-Kyoto framework agreement. The UNFCCC has developed some of the principles under which climate change collaboration will continue to work and has close relations with the Intergovernmental Panel on Climate Change that is the pre-eminent source of consensus science. It is the 'parent' of Kyoto and its Conference of Parties (COP) is presently the focus of most international collaboration on climate change.

The main difficulty with locating a future emissions-trading framework within the UNFCCC, that has become much more evident in the years since the Rio Conference, is that it is saddled with UN 'baggage'. Even the **specialized agencies of the UN tend to be 'issues-led' rather than 'membership-led'**. There is a strong temptation (even a 'tradition') for the Secretariat and Conference to get out ahead of member governments. Single-issue international NGOs frequently have considerable formal and informal sway in councils, operations and national delegations because of the issues-orientation. Worse, an issues-led mandate inevitably becomes the domain of a narrow domestic constituency (and government agency) making it more difficult to establish 'whole-of-government' decision processes related to the agreement/conference.

⁶ McKibbin and Wilcoxon describe a regime based on *national* markets, but there seems to be no reason why these markets could not be *regional*. This would have the advantage of incorporating the ETS, for example, in its current form using allowances created in accordance with the McKibbin-Wilcoxon proposal.

Organizations such as **WTO or the World Customs Organization or the Bank for International Settlements** or ICAO that are membership-led and operate agreements in the form of contracts among government members do not operate within the UN framework for good reason. Although they have specific focus and priority 'issues' to address, the interests of the Members that include foreign policy interests, development, environmental, employment, investment interests etc dictate the agendas of these organizations. Each Member's participation is more likely to balance interests across a range of government concerns and to be less hostage to a single objective. One way to describe this benefit is that it leads to more **'rational' decisions at the top level of government** that reflect an accounting for all affected interests.

- * Since a contractual agreement among governments is the surest basis for an enforceable agreement on market regulation, it is probably preferable that it be created in a 'Membership-led' organization rather than in a UN agency.

This decision could, however, pose some recruitment risks.

What scope?

The 'scope' of a treaty is its field of application; that is, the activities of the state in international affairs to which it applies. This, in turn, depends on the purpose and coverage of the treaty; it may also be indicated in the preamble of the treaty. 'Scope' does not usually refer to the extent or degree of rights and obligations created in the treaty, but it is convenient to deal with the legal scope of the protections afforded under the treaty under this heading.

Purpose

- * The purpose of the emissions-control and trading treaty should be to **limit and reduce** the level of global GHG emissions by, among other things, regulating the creation of one or more market-trading mechanisms that will **'discover' the price**, from time to time, **of the externalities** in GHG emissions and **internalize that value in the price of activities** (such as hydrocarbon combustion) **that give rise to GHG emissions**.

The market for emissions-allowances need not be a global market, although the marginal price of emissions should be the same everywhere to guard against 'regime-shopping' by investors in primary activities such as power generation or minerals processing.

Coverage

- * To implement a regime that is competitively neutral with respect to all sources and emitters of GHG emissions, the control and trading provisions of the global regime should extend to all emitters and all forms of GHG, applying the principle of **like controls in like circumstances** for all defined emissions

Scope of rights, obligations

The global framework agreement should ensure the preservation of an efficient, open, 'competitive' global market for primary goods and services—such as hydrocarbon energy resources, power generation and environmental technologies—by obliging governments to create a regulatory framework with certain characteristics for the creation of, and trading in, the derivatives such as emissions-allowances. This would preserve Australia's 'competitiveness' in the primary markets that are so important to our economic welfare. The global framework agreement should also create rights belonging equally to each Member government to see these obligations fulfilled by all other Members.

To ensure transparency, competitive neutrality and simplicity (a crucial condition of durability, verifiability and universal application) the **regime should not stipulate the detail** of domestic laws, policies and regulations on the definition, allocation and trading of emission property-rights ('allowances', 'licenses'). Instead the treaty should require that the laws adopted by Members have certain characteristics.

- * The concepts of **non-discrimination, national treatment and transparency** that are employed in trade treaties to ensure equitable administration of the interests of competitive firms whether domestic or foreign-owned should be applied to the creation and management of allowances/licenses.

So, for example, the rules could specify that licenses should be tradable by any firm domiciled in the territory of any member of the agreement; that the terms of allocation or trade among firms domiciled in the national territory should be the same (or better) for firms owned wholly or partly by foreigners; that the terms of allocation and trade should be published, verifiable using published data (e.g. in the case of rate-restrictions or historical entitlements) and not changed without notice or resumed without full compensation etc

Verification of compliance could impose a major burden on a global emissions-control/trading regime. The Kyoto CDM mechanism, which is bloated with verification machinery, demonstrates that no matter how elaborate the safeguards, private interest will always find the cracks in any regime if the stakes are high enough. Experience in WTO suggests that notification-based surveillance is weak and usually incomplete. At the very least, the rules of an emissions-control and trading regime should be 'robust to self-interest'; for example:

- * Governments should have some revenue-interest in acting in accordance with the regime's provisions.⁷

The regime should include **dispute settlement** provisions intended to avoid or resolve disputes.

In the most effective of all multilateral disputes mechanisms (the WTO Dispute Settlement Agreement) Member governments are encouraged to resolve their disputes without recourse to adjudication on any basis that is mutually acceptable to the parties to a dispute. This disputes-avoidance or conciliation rule may apply to some aspects of an emissions-control and trading regime but failure by one member to take the required steps to control emissions can never be 'conciliated' among disputants since it engages the interest of every other member of the regime. The disputes system should be compulsory in the same

How should permits be created, allocated, traded

If it were feasible or desirable to apportion to each member of the regime an obligation to contribute to a targeted cut in global emissions then the regime might be indifferent to the means employed by member government for creating, issuing and allocating permits, as long as the regulations met requirements described in 'Scope'.

But the difficulty of specifying targets that are compatible with the incentives of Members and the likelihood that any proposed targets will lead to extensive and futile 'target bargaining' (see below) are **reasons for not attempting to use targets to specify obligations** under the regime.

Fortunately there is at least one plausible design for an emissions-control and trading regime that does not rely on targets (the McKibbin-Wilcoxon proposal) and experience of at least one successful emissions-control and trading regime that is operating without target-based obligations (the US Clean Air Act restrictions on SO₂ emissions). These regimes are compatible with a 'motivational' target but employ 'caps' on emissions, unrelated to any target, as the mechanism to create tradable property rights (hybrid volume and price caps in the case of the McKibbin-Wilcoxon proposal and an emissions-rate-cap in the case of the Clean Air Act) .

- * The framework regime should not make any prescriptions about the allocation of emission licenses within each economy any more than the global goods trade regime need prescribe who should hold import licenses or quota rights.

Governments may choose to auction or to use an historical-rate basis or any other objective criterion. It makes little difference to the efficiency of a global emissions-trading regime who benefits from the allocation

⁷ The McKibbin-Wilcoxon proposals have such built-in incentives

as long as the process of allocation complies with the rules on market transparency, non-discrimination and national treatment built into the framework.

Under the McKibbin-Wilcoxon proposals there is no international trade; endowment rights are not tradable internationally (although they may be owned by foreign firms domiciled in any market) and annual emission licenses have the same regulated price in each market, so there is no incentive to trade. This means that the framework rules on competition exist solely to ensure the efficient functioning of domestic markets. It may be asked whether, in this case, a multilateral framework agreement is necessary. The framework agreement establishes a defence of the global interest in the efficiency of the market in each domestic economy. It is the local market that ensures a rise in the local value of endowments that will progressively squeeze emission incentives. As we saw, above, the global framework also imposes the 'competitive neutrality' obligation of 'like controls in like circumstances'.

Transparency and verification

Regulatory transparency and verification of the implementation of obligations both help to ensure that a treaty concerned with market regulation works efficiently and promotes fair competition. But the transparency and verification provisions of the Kyoto Protocol leave the details of these requirements in the hands of the Conference of Parties with the result that they are ad-hoc and, especially in the case of the CDM mechanism, burdensome and ineffective.

* A future framework agreement should *stipulate* requirements for transparency, including the provision of 'due process', and the minimum notifications needed to verify compliance.

Obligations on transparency in WTO or the host of bilateral trade, investment and tax treaties are applied by both a system of obligatory notifications and by obligations to publish laws, policies and regulations and decisions taken under municipal laws. WTO's experience with notifications shows, unsurprisingly, that the greater the number of notification obligations, the less likely members are to comply with each of them in detail. Shortly after the Agreements entered into force a committee discovered that there were 175 notification obligations related to goods trade alone and that in some cases fewer than 10% of the Membership had met their obligations to notify.

The concept of transparency has been extended in trade treaties over the past few decades to include **elements of 'due process'** in municipal enforcement, stipulating rights of review of decisions. The elements that are especially important to the 'fairness' of market regulation are the provision of judicial review of administrative action, the requirement that regulators give reasons for decisions affecting private interests and for those decisions to meet tests of reasonableness, promptness and proportionality in enforcement.

Other key design elements

Common but differentiated responsibility (CBDR)

The 'principle' of CBDR enshrined in Principle 7 of the Rio Declaration on Environment and Development that "In view of the different contributions to global environmental degradation, States have common but differentiated responsibilities..." is probably now a settled principle of international law. Unless repudiated (unlikely), it will be taken into account in the interpretation of any future treaty on GHG emissions.

There may be many different ways to incorporate **CBDR** in an emissions-trading scheme but it is not a function of an efficient market to discriminate.

* Differentiation should be created by elements of the framework *outside* the trading-scheme; for example by being built-into the nature of the market-making 'caps'.⁸

⁸ as in the McKibbin-Wilcoxon proposal which provides less restrictive allowance endowments for developing countries

Any provisions for differentiation *within* the trading-scheme—such as different marginal prices for emissions in different countries/regions, or qualifications on the trades themselves—will introduce distortions that reduce the efficiency of the market, undermining the "common" goal of cutting emissions in the name of "differentiated responsibility".

Differentiation and burden sharing

The global trading system has never managed to deal in a very satisfactory way with 'differentiation' among members of WTO predicated on the supposed needs of development. But it does offer some lessons that should be taken into account in the design of an emissions-control and trading regime that will impose obligations on all member economies

Criteria for differentiation

'Differentiation' recognizes **an equitable issue**: most of the responsibility for GHG emissions up to now must be allocated to industrialized economies who also have a greater depth of resources that can be devoted to mitigation strategies. But there is **an efficiency issue** that a multilateral emissions regime must address, too: exemptions from obligations based simply on equity considerations would leave the fastest-growing emitters unconstrained, defeating the purpose of the regime.

Differentiation in the UNFCCC is based only on the self-description of 'developing' countries; neither wealth nor GHG emission records were taken into account. A number of economies that count as 'rich' and 'capable' under any definition were exempt from emissions controls including: Singapore, Republic of Korea, Saudi Arabia and United Arab Emirates.

WTO and other intergovernmental organizations have chosen not to confront similar absurdities in their management of 'differentiation' but have instead allowed the value of this 'single-criterion' differentiation to shrink. National preference schemes have ceased to offer much 'differential' advantage except to the poorest countries (the 'least developed') and 'general differentiation' under the rules has been pared back in new and revised agreements or fallen into disuse (e.g. Article XVIII of GATT).

Because no single criterion for differentiation is likely to respond both to "equity" considerations and to requirements for "efficiency" in reducing emissions on a global basis, the emissions-control and trading regime should base differentiation on multiple criteria relevant to the objectives of the agreement; for example:

- * Differentiation could be determined by combining the share of global emissions and a continuous income-related function such as GDP per capita (using PPP prices) that would avoid abrupt 'graduation' thresholds.

By combining both criteria economies, economies such as China and India that are poor in GDP per capita but that contribute high volumes of emissions will have appropriate obligations to share in GHG emission reductions.

Methods of differentiation

Differentiation should never create differences in the nature of the obligations or rights under the agreement and should not permanently skew the balance between rights and obligations (because that amounts to the same thing). Rather, differentiation should be based on **temporary imbalances** that can be described using **objective measures** in favor of the beneficiaries. For example, a longer time period over which a measure may be phased-in or a formula variation that permits a higher volume of initial allowances that does not, in itself, hamper the objective of emissions control and reduction.

Some lessons from multilateral agreements

Targets for GHG reductions are futile

Adopting a target for emissions or GHG volumes holds out the prospect of simplifying the negotiations over the objective, the allocation of responsibility and the basis on which responsibility can be 'differentiated'. There will probably be enormous pressure on governments renewing the Kyoto protocol to extend and 'sharpen' the existing Kyoto targets, but

✱ Experience in a variety of multilateral agreement shows that targets are futile.

Misalignment of objectives

Targets that have the political force of simplicity—e.g. atmospheric concentrations of 560 ppm of CO₂ equivalent—are frequently misaligned with the real objective of a program supposedly coordinated by the targets.

It may seem at first, for example, that the objective of emission controls is to reduce the level of GHGs in the atmosphere; but it's not. The level of GHGs could be rapidly reduced if we didn't care about economic growth, future prosperity or more equitable distribution of global income. A universal dictator could cut GHG output dramatically by shutting down all the coal and gas-fired power plants in the world, leaving a rich country like France still operating at something like 90 percent of capacity (80% of electricity from nuclear power and more than 10% from renewable sources in 2001 according to OECD data) and almost every poor country in the world, including China and India starving in the dark. The objective of emission controls is much **more complex than a GHG target suggests**. So apportioning a GHG volume target is a poor approximation of the real task.

Target bargaining

Targets are frequently incompatible with the incentives (including private information, tastes etc) operating on those whose actions are supposed to be coordinated by the target. Among the debilitating absurdities this produces *target bargaining* is especially common in multilateral agreements whose objectives are embodied in targets.

Consider what occurred in the prolonged Uruguay Round of **GATT negotiations on cuts to subsidies** paid to farmers in rich countries to grow (or, sometimes, not to grow) agricultural products. Many of these production subsidies were known to distort international markets because they created mountains of unwanted produce that were, in turn, dumped on world markets unfairly depressing the market-price received by farmers that do not receive subsidies, mostly in poor countries. Because the farm subsidy programs in each rich country came in a variety of different forms always complicated by elaborate regulations, an agreement was reached that only those subsidies that had the worst effect on world markets would be banned; other subsidies would be cut by a proportion of the expenditure on them in a 'base' year and still other subsidies would be permitted to continue because they did not unfairly affect the world market.

When the target bargaining eventually came to an end in 1994 the negotiators had excelled themselves in producing an absurdity that had a headline cut of 30 percent but had virtually no impact on subsidies actually paid to farmers in countries such as Europe, Japan or the United States. By target-bargaining they had re-defined the categories of subsidy – creating a fourth category in the process – picked a 'base year' in which they happened to have record farm-subsidy expenditures, whittled away the programs affected by invoking 'de minimis' rules and then shifted as much money as possible into the unaffected category. These countries met their obligation to achieve the required average 30 percent cut in trade-distorting subsidies in the first year of the Agreement with scarcely any impact on farmers' incomes. Seven years later, in 2002, the USA was able to adopt the most generous set of farm subsidy payments in its history.

The Kyoto targets are the product of a similar target-bargain made initially at the 1995 Berlin meeting of the UNFCCC based on self-interest rather than on their rational relationship to the objective.

“It is worth asking why, exactly, these particular targets were chosen. The simplest answer is that national self-interest played a key role. The point is most obviously true for developing nations. India’s greenhouse gas emissions exceed Germany’s; those of South Korea exceed France; next to the United States, China is the largest emitter of greenhouse gases in the world. But none of these nations is controlled by the Kyoto Protocol. Russia was given a target of 100 percent of its 1990 emissions, but in 1997, its actual emissions were already merely 70 percent of that amount, because of economic difficulties. The trading system created by the Kyoto Protocol actually ensured a huge economic boon to Russia, as everyone was aware. Germany appeared to accept a significant reductions requirement—8 percent by 2012—but in 1997, its own emissions were already 10 percent lower than 1990, as a result of reunification with the former East Germany, whose plummeting economy resulted in radical emissions decreases. For the United Kingdom, the story is not altogether different. The target, a reduction of 8 percent, was less severe than it seemed, because state subsidization of natural gas had already led, in 1997, to a level 5 percent below that of 1990. The real loser, in terms of the actual costs of mandatory cuts, was the United States”⁹

The Montreal Protocol -- a 'special case'

The targets of the Montreal Protocol on Substances That Deplete the Ozone Layer succeeded, despite the misalignment of the proposed target of zero use with the private interests and incentives of the majority of participants (the UK and Europe) and despite target-bargaining in the first iteration of Montreal. But:

✳ **Montreal turns out to be a very special case that ‘proves the rule’ that targets do not normally work as an operational principle.**

Action to eliminate the perceived threat from these compounds began in the United States with a national ban in 1987 on the use of CFCs in aerosol propellants that was progressively tightened under public and Congressional demand. European and other governments remained sceptical of the scientific evidence for the threat (particularly the UK government, possibly protecting ICI patents on CFC production) until a combination of new scientific support (an alarming 1985 paper in Nature magazine) and US pressure forced a negotiation in late 1987. The Montreal meeting revolved around an intense bout of target bargaining between the United States’ demands for a 95% cut in current use and the European position of a freeze on further use. It ended with agreement on a 50% reduction that was considered ineffective by scientific commentators (it was later tightened to a prohibition and extended to developing countries) augmented by potential trade sanctions for non-compliance.

But the success of the Montreal protocol was **due to peculiar factors that in several ways prove the rule** about the unfeasibility of targets in the climate-change context. First, the USA—by far the strongest proponent of a ban—dominated world wide production and use in the early 1980s (almost 50% of total volumes) Also the commercial value of CFC production for US chemical firms such as Dupont was declining as patents on CFC production expired the prospects increased for profits from substitute products (the converse of ICI’s position in the UK). These two factors ensured that a target of zero use would accord with the perceived interests of a near majority of producers and users (in the USA). Second, horrifying estimates of the consequences of ozone depletion within the lifetime of voters (epidemic levels of skin cancers and cataracts) allowed the US Environmental Protection Agency and the White House Office of Management and

⁹ Sunstein, Cass, R “Montreal versus Kyoto: A Tale of Two Protocols”, Harvard Environmental Law Review (forthcoming); AEI-Brookings Joint Centre Working Paper No. 06-17

Budget to concur on a qualitative cost-benefit analysis of a ban that appeared to demonstrate that the USA would see a net benefit even if it were the *only party* to ban the substances.¹⁰

Creating tradable rights using emission caps

Regimes that use market mechanisms to achieve some shared public good typically create an artificial property right as the basis of value—the encapsulation of incentive—that is traded in the market. But the market-making regulation does not have to be a target. The largest, oldest and most widespread ‘artificial market’ created by restrictive regulation is the patent system whose roots are found in medieval letters-patent granting royal monopolies. Then, as now, the patent (or other forms of intellectual property), whose objective is a public good rather than a private gain—to encourage innovation in the interests of economic growth—is a restriction on production that in no way depends on the adoption of a target for innovation or growth.

Examples of 'capped' emission regimes

GHG emission-rights are not a natural good any more than intellectual property rights; they must be bounded by a restrictive regulation in order to become tradable property. In the two most prominent emissions-trading regimes, so far, the restrictive regulation has been based on the issue of capped allowances whose aggregates **relate only indirectly to a ‘target’**.

In response to the US/Canadian Acid Rain agreement, the 1990 and 2000 amendments to the **US Clean Air Act** set reduction targets at 8.95m tonnes of SO₂ and a target emission-rate for NOX. The SO₂ program provides a cap on emission allowances, defined as a rate of emission per regulated installation (mostly power-stations). The allowances issued at the start of the program in 1995 added up to volumes equal to actual volumes of SO₂ emissions in 1990 while a ‘ratchet’ provision cancelled one issued allowance for each allowance used during any year. This reduction in allowances ensured that their value would rise and therefore an incentive to reduce emissions and sell remaining allowances.¹¹ The SO₂ allowances are not, however, allocations of the final target rate.

In the case of the **EU Emissions Trading Scheme (ETS)**, EU-issued allowances are distributed among Member States up to limits set in each Member's National Allocation plan that must be ‘in line with’ national plans to achieve Kyoto targets (taking into account other emissions controls etc).¹² In other words, the allowances are not determined in any direct way by the Kyoto targets.

The US and EU schemes demonstrate that market-making restrictions need to be tracked and audited and, in the case of the ETS, elaborately negotiated and certified even when not linked to the apportionment of a target. But both of these schemes are mandated within a municipal legal framework and so can be negotiated, tracked and enforced, like other municipal laws or regulations, with little difficulty. Multilateral trading schemes that employ target-related restrictions can be expected, for the reasons we have seen, to

¹⁰ Sunstein, C. Op. Cit. On the arguable validity of the estimates, see also Ben Lieberman “Doomsday Déjà Vu: Ozone Depletion's Lessons For Global Warming”, Competitive Enterprise Institute, Washington 1998 accessed at <http://www.cei.org/gencon/025,01184.cfm>

¹¹ Information on the operation of the SO₂ and NOX programs is available from <http://www.epa.gov/airmarkets> and in the OECD document “Emissions Trading: taking stock and looking forward”, COM/ENV/EPOC/IEA/SLT(2004). The US non-tradable NOX restriction is a ‘per-installation’ limit on allowable annual emissions -- optionally averaged over multiple boilers -- that can be achieved through a variety of mechanisms and can be ‘re-set’ on a per-installation basis to a higher level subject to appeal and inspection for ‘best practice’.

¹² See the Commission's Q&A on the Emissions Trading Scheme at <http://europa.eu/rapid/pressReleasesAction.do?reference=MEMO/05/84&format=HTML&aged=1&language=EN&guiLanguage=en>

have inherently greater problems of target negotiation (and ‘target bargaining’), allocation of ‘shares’, tracking and enforcement.

The McKibbin-Wilcoxon proposal employs two different forms of cap—a volume-cap on emission endowments and a rate-cap on annual emission licenses—to reduce emissions from current levels without relating the total volume of emissions in any period to a target.¹³ Total emissions cannot be known in advance because they comprise both a capped quantity of emission ‘endowments’ and an unknown quantity of emission ‘licenses’ whose price is fixed during 10-year periods. The price of endowments in the market will allow predictions about emissions but not certainty. The only ‘certainty’ in the regime will be that the price of endowments will reflect, market views about future per-ton license prices given the level of emissions, concern about the degree of forcing and private evaluations of risk. This, they argue, will be sufficient to progressively raise the traded value of the endowments and thus to restrict emissions below the levels of the initial endowments.

Caps are negotiable; targets not

In some contexts the difference between using a ‘cap’ and using a target as the basis of a market-making regulation may be nothing more than semantics; but not in the case of climate-change. A target for emissions places a **price tag** on the present value of future risks that is uncertain in part because the risks are difficult to evaluate and the **costs** of mitigation (reaching the target) are **not commensurable across different economies**. Cutting California’s emissions by 25 percent by 2020 could involve technological improvements that will lift productivity and growth; cutting China’s emissions at the same pace probably means cutting output. Using an apportioned target as the basis of a market-making restriction—as the Kyoto Protocol suggests—assumes information about the value of a given level of emissions that the trading system itself is intended to reveal. This uncertainty compounds the difficulty of negotiating an emissions target.

In contrast to a target, **a cap can have an arbitrary relationship to the estimated value of the goal** in terms of the volume or value of emissions. Europe’s ETS trading scheme is designed to not to achieve Members’ Kyoto targets (themselves an arbitrary representation of UNFCCC goals) but emissions levels specified in a National Allocation Plan that is only ‘in line with’ the Member’s target. Each member chooses its own market-making restriction level without necessarily negotiating the restriction with other EU Members. In the case of the US Clean Air trading scheme for SO₂ emission allowances, the ‘cap’ was in the form of a rate of emissions (a ‘rate-trading’ scheme) that linked to the starting point of the problem (SO₂ volumes of about 8.7m tonnes in the Phase I sector to which the allowances applied from 1995) and not to the target level of 8.95m tonnes for total emissions (from Phase I and Phase II sectors) by 2010.

Similarly, the two caps in the McKibbin-Wilcoxon approach have little relationship to the final target for emissions reduction. McKibbin-Wilcoxon suggest that the emission endowment allowances for Kyoto Annex-I countries should start at their current Kyoto targets (linked to 1990 emissions) and Annex-II countries at current emissions (or fractionally higher) because although arbitrary that decision avoids any need to re-negotiate a starting point. They also propose a price for the first issue of annual licenses very close to the opening prices on the ETS because that, too, although arbitrary is not difficult to agree.

*** A trading regime that uses a cap rather than a target as the market-making restriction can afford an arbitrary starting point—choosing the easiest option—because it allows the market to iterate toward a view of the value of restrictions.**

It might be objected that the 10-year re-negotiation of the annual emission-license prices would be no more accurate a reflection of risk than a target. But the decision on a 10-year price ‘cap’ will impact only the marginal price of the risk and will stand for only a short time relative to the period over which the threat looms

¹³ McKibbin, W.J., “Moving beyond Kyoto”, Brookings Institution Policy Brief No. 66, Washington, 2000. Unfortunately, McKibbin, who deplores Kyoto targets also confusingly, describes the caps in his hybrid plan as ‘targets’

(two centuries or more). Successive compromises on the short-term license price are likely, grossly, to reflect marginal changes in contemporary scientific consensus on the risk—which is close enough.

'Caps' allow progressive pricing decisions

Information about the value (and probability) of future risks—including rare catastrophic risks such as the melting of the Greenland or West Antarctic ice shelves or the collapse of the Atlantic thermohaline circulation or rapid escalation of emissions feedbacks due to warming of tundra—will improve over time. The challenge in managing an effective market for those risks (or, equivalently, for risk mitigation through GHG emission controls) is to create opportunities for information to affect prices without disruptive speculation (or panic).

The McKibbin-Wilcoxon proposal achieves this objective by allowing the market to take a view on the prices of annual emission licenses that will be consolidated in the value of the once-forever emission endowments. The annual license prices are fixed over 10-year periods to allow some stability, but at each price 'rest' the market will take a view about the level at which prices will be fixed in the next period and will build that expectation into the variable price of tradable endowments.

About Peter Gallagher & Inquit

Peter Gallagher is a consultant on **trade and public policy**. He is a former senior Australian diplomat with more than two decades experience of trade analysis and advocacy on behalf of the Australian government in Washington, Brussels and Geneva. He now consults in **Australia and internationally** to firms, industry associations and international institutions.

In addition to hundreds of reports for clients, Peter is the author of numerous journal and newspaper articles on international affairs and has written several authoritative books on global trade issues, including '**WTO and Developing Countries**', '**A Guide to WTO Dispute Settlement**' and '**A Guide to Reading WTO Schedules**' published by the WTO.

In 2005, Peter was commissioned by WTO to write "**WTO: The First Ten Years**" for the tenth anniversary celebrations of the Organization. He also co-edited a ground-breaking compilation of case studies "**Managing the Challenges of WTO Membership**", published in 2005 by Cambridge University Press for AusAID and the WTO that includes dozens of examples of business and industry associations working with national governments to manage participation in the global trading system.

Peter has a wide range of experience of working with business organizations and governments in the Asia and Pacific regions through the UN's International Trade Center for whom he coordinated networks of business people and officials in 11 countries from Mongolia to Pakistan. He is an Associate of the Institute for International Business Law and Economics at the University of Adelaide.

Peter began his career in the Australian diplomatic service, becoming a senior trade negotiator and holding appointments in Brussels (Deputy Chief of Mission, Mission to the European Union), Washington (Counsellor Commercial) and managing Geneva-based negotiations during the GATT's Uruguay Round.

After leaving government in 1992, he was Chief Executive at the Australian Dairy Industry Council until, in 1994, he joined the Graduate Business School, University of Melbourne becoming an Associate Professor in the Center for the Practice of International Trade. He founded Inquit in 1996 to provide communications services and advice to firms and remains the Principal consultant at Inquit.

Peter holds a Master of Laws in Public Law from the Australian National University and a B.A.(Hons) from the University of Sydney. He now lives in Melbourne.