Internalizing the Climate Externality: Can a Uniform Price Commitment Help?

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Executive Summary

The world is currently mired in what has aptly been called *global warming gridlock*. The core problem is an inability to overcome the obstacles associated with free riding on a very important international public good. The 'international' part is significant. With climate change there is no overarching international governance mechanism capable of coordinating the actions necessary to overcome the problem of free riding.

NEGOTIATING PRICES VS. NEGOTIATING QUANTITIES

At first, for simplicity of exposition I assume that a commitment to a global price of carbon will be implemented as an internationally harmonized, but nationally retained, carbon tax.

With cap-and-trade, total emissions are known but the price is uncertain. With a carbon tax, the price of carbon emissions is known, but total emissions are uncertain. In the real world, I think that energy price volatility is very poorly tolerated by the general public. On the other hand, it is difficult for me to imagine the broad public getting quite so upset because total emissions fluctuate.

It has been argued, I think convincingly, that a carbon tax is more easily administered and is more transparent than a cap-and-trade system. Also, the collected revenues from an internationally harmonized carbon tax remain within each country. This, I think, is a desirable property. Both approaches are subject to immense criticisms. I merely want to establish a level playing field.

The inspiration for this paper is the perception of a desperate need for some radical rethinking of international climate policy. As conceptual guide for what negotiations might accomplish, I ask the reader to temporarily consider what might happen in a "World Climate Assembly" (WCA) that votes on global carbon emissions via the basic principle of majority rule. Nations would vote for their desired level of emissions stringency on behalf of their citizen constituents with the votes weighted by each nation's population.

THEORY OF NEGOTIATING A UNIFORM CARBON PRICE

At a theoretical level, I would suggest that the instruments of negotiation for helping to resolve the global warming externality should ideally possess three desirable properties, (1) Induce cost effectiveness, (2) Be of one dimension centered on a "natural" focal point, and (3) Embody

"countervailing force" against narrow self-interest. Using these three criteria, I now compare an idealized binding harmonized price with an idealized binding cap-and-trade system.

The first two properties (efficiency and low dimensionality) argue in favor of a one-dimensional carbon price over an n-dimensional harmonized cap-and-trade system among n nations. I believe this is supported by both Schelling's concept of a salient focal point and Coase's concept of transactions costs. Put directly, it is easier to negotiate one price than n quantities—especially when the one price can be interpreted as "fair" in terms of equality of marginal effort.

The third desirable property, the embodiment of a "countervailing force" against narrow free-riding self-interest is arguably the most important property of all. This "countervailing force" property is inherently built into a price-based harmonized system of emissions charges, but it is absent from a quantity-based international cap-and-trade system as traditionally formulated. It is in my own narrow free-riding self-interest to want my cap to be as large as possible (whether or not my cap will be tradable as a permit). Other than altruism, there is no countervailing force on the other side encouraging me to lower my desired emissions cap because of the externality benefits I will be bestowing on others.

An internationally carbon price is different. If the price were imposed on me alone, I would wish it to be as low as possible so as to limit my abatement costs. But when the price is uniformly imposed, it embodies a countervailing force. Counterbalancing my desire for the price to be low is my desire for the price to be high so that other nations will restrict their emissions. A binding uniform price of carbon emissions has a built-in self-enforcing mechanism that countervails free riding.

With further restrictions, the model shows that a carbon price comes as close to an optimal price as the median per-capita marginal benefit is close to the mean per-capita marginal benefit.

CONCLUDING REMARKS

I close by noting again that global warming is an extremely serious as-yet-unresolved international public goods problem. With the failure of a Kyoto-style quantity-based approach, the world has seemingly given up on a comprehensive global design, settling instead for sporadic national measures. These partial measures seem far from constituting a socially efficient response to the global warming externality. Perhaps, as was previously suggested, the quantity-based focus on negotiating emissions caps embodies a bad design flaw. The arguments of this paper indicate a way in which negotiating a binding internationally-harmonized nationally-collected minimum price on carbon emissions might help to internalize the global warming externality.