Global climate policy and the polluter pays principle: A different perspective

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Abstract
Since developed countries have contributed most of the greenhouse gas emissions currently responsible for climate change, should they pay all or most of the costs for needed climate change policies? The original polluter pays principle contends that firms and in turn countries should be charged for the full costs to society of their current pollution. This policy promotes both efficiency and common perceptions of equity. The historic polluter pays principle—a modification of the original polluter pays principle used to argue that developed countries should pay most of the costs for climate policies—contends that the costs of remediating past pollution should be allocated according to their past pollution. For various reasons, however, the historic polluter pays principle does not promote efficiency nor even equity. So those who advocate that the developed countries shoulder the lion’s share of climate policy costs need to argue that developed countries should pay most of the costs for climate policies should be implemented so that current producers pay the full costs to society of their greenhouse gas emissions wherever they are located. These findings are of interest to the mineral and energy sectors since global climate policies will substantially affect these sectors. Moreover, one can extend the findings to remediation policies for all past pollution, including for example the cleaning up of old historic mining sites.

From an early age we are taught to clean up after ourselves. Thus for most people the polluter pays principle—or the idea that firms, consumers, and even countries should pay for their pollution—seems both logical and fair.

Economists and policy analysts have also long advocated the polluter pays principle. Their rationale, based on both efficiency and equity considerations, is a bit more sophisticated. It distinguishes among four types of efficiency.

Production efficiency focuses on how goods are made and in particular on the mix of labor, capital, energy, and other inputs employed in their production. If the use of environmental resources, such as water or air, is free or underpriced, firms have incentives to substitute these resources where possible for labor, capital, and other inputs for which they have to pay. As a result, when firms fail to pay the full social value for their environmental resources, they will overuse these resources, including greenhouse gas emissions, and underuse other inputs.

Allocative efficiency depends on how much of a good is produced, or more generally on the mix and amounts of goods and services that the economy generates. We want the market to continuing producing a good up to the point where the benefits to society of the next unit made just equal its costs to society. Where greenhouse gas emissions and other environmental resources are underpriced, the cost and prices for goods using these inputs will be too low. The market will produce more and sell more of these goods than is socially optimal.

Location efficiency occurs when goods and services are produced where the social costs are lowest. If greenhouse gas emissions and other environmental resources are free or underpriced in some countries but not others, firms producing goods made with these resources will tend to gravitate toward the former set of countries, even though the full social costs of their output may be higher than elsewhere.

Dynamic efficiency is concerned with the creation and diffusion of new technology. Where firms pay the full social cost of the resources they employ, they have strong incentives to develop new innovations and technology to reduce their use. The tremendous effort that firms across the economy make to cut their labor requirements and to increase their labor productivity reflects dynamic efficiency. On the other hand, when greenhouse gas emissions are free or underpriced, firms have little incentive to develop new technology to reduce their emissions.
emissions and other inputs are underpriced or free, these incentives are diminished or completely eliminated. Over the long run, dynamic efficiency is by far the most important of the four types of efficiency. It has the potential to reduce greatly greenhouse gas emissions.

Fairness and equity considerations reinforce the strong case for the polluter pays principle based on efficiency. While reasonable people can differ over what is and what is not equitable, most of us would agree that firms (and in turn their customers) consuming valuable environmental assets should pay the full social costs of these resources.

In the contentious and on-going debate over who should pay for needed global climate policies, public officials and others, particularly from developing countries, have espoused a variant of the original polluter pays principle—we can call it the historic polluter pays principle—to contend that developed countries should pay for all or most of the costs of reducing greenhouse gas emissions. In some instances, the developed countries are called upon to go even further and compensate poorer countries for the damages they are suffering from global climate change.

Advocates of such policies point out that developed countries contributed the lion’s share of the stock of greenhouse gas emission in the atmosphere and so are largely responsible for global warming. In consuming this valuable global resource developed countries fostered the growth of their economies and generated the high living standards to which the rest of the world now aspires. To ask the developing countries to divert resources from their own growth to support global climate policies, the need for which was created by the developed countries, they contend is both illogical and unjust.

On first blush this argument seems reasonable. Over the years it has stiffened the resistance of the developing countries to paying for global climate policies.

Despite its intuitive appeal, however, the historic polluter pays principle suffers serious shortcomings. By focusing on past rather than current production, it allows developing countries and their firms—the world’s largest current and future source of greenhouse gas emissions—to use this valuable global resource without fully paying for it. And, as noted earlier, this causes distortions in the way goods are produced, in the mix of goods produced, and where they are produced—all of which accentuate greenhouse gas emissions. Of even greater significance, it reduces the incentives in both developing and developed countries to generate new technologies reducing greenhouse gas emissions. In short, the historic polluter pays principle promotes none of the efficiencies that we normally associate with the original polluter pays principle.

The historic polluter pays principle in addition may not serve the interest of equity. It is true that the economic development of Britain, Germany, the United States, and other industrialized countries over the past two centuries has created a number of bads—that is, developments that reduce the well being of the current and future generations. Among these are the greenhouse gas emissions currently responsible for climate change. However, this economic development along with the wealth it generated has also created many goods—that is, developments that enhance current and future welfare. These goods, the fruit of the advances in science and technology on which modern civilization is based, include antibiotics, automated assembly lines, cell phones, pest resistant crops, airplanes, personal computers, air conditioning, and thousands of other products and services that make life so much more comfortable and enjoyable. Most of these advances are readily available and widely used in developing countries. Even where patents and secrecy protect intellectual capital, consumers still reap most of the benefits.

The equity argument that the developed countries should pay for the bads they have imposed on today’s world ignores the fact that these countries have also created many goods that people around the world enjoy. Moreover, the bads and the goods are linked; they come as a package. For the development of Europe and North America—and the greenhouse gas emissions this development gave rise to—created the wealth that supported the research and development that led to the advances in science and technology that produced most of the goods enjoyed around the globe. If a country and its people now benefit from these goods, is it really fair to claim that they should not also have to share in covering the costs of alleviating the associated bads?

The preceding calls into question the rationale for using the historic polluter pays principle to argue that the developed countries should pay for all or most of the costs of climate policies. This does not necessarily mean, however, that the developed countries should not bear most of these costs. If the historic polluter pays principle is rejected, then it must be replaced by some other criterion or rationale for allocating the costs of climate policies. One might, for example, ask countries to pay according to the benefits they expect to receive from such policies, or according to their ability to pay, or according to their willingness to pay.

The first of these criteria—allocating the costs on the basis of the expected benefits—would presumably not shift most of the burden toward the developed countries, if as it widely believed those countries suffering the most from climate change are not the (developed) countries most responsible.

However, the ability-to-pay and the willingness-to-pay criteria do suggest that developed countries should accept a disproportional share of the costs. Since developed countries have higher per capita incomes than the developing countries, their ability to pay is greater. We also know that the demand for environmental goods including mitigating global climate change rises with per capita income and economic development. Poor countries are more focused on basic food supplies, public health services, education, housing, and other more immediate needs. So developed countries are likely to have stronger preferences and a greater willingness to pay for preventing climate change.

However, one should clearly distinguish such arguments from the historic polluter pays principle. One can accept the former while rejecting the latter. Moreover, in rejecting the historic polluter pays principle, it is particularly important not to abandon the original polluter pays principle. If developed countries decide to accept a disproportionate share of the costs for climate policies, they should do so in ways that ensure current polluters still pay the full costs of their pollution.

Regardless of how the costs are distributed, if producers in developing countries or anywhere are allowed to emit greenhouse gases without accounting fully for their social costs, this will foster production, allocative, and location inefficiencies. And, dynamic efficiency will suffer as well, undermining the most effective weapon society has in its arsenal for dealing with climate change—namely, the incentive to create and adopt new technologies that reduce greenhouse emissions.