



Global Benefit–Cost Analysis in US Climate Policy

HERESY OR EVOLUTIONARY LOGIC?

Accounting for global damages of domestic carbon dioxide emissions represents a challenging departure from the decades-old way of carrying out benefit–cost analysis in the United States.

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The challenge of reaching a workable accord for greenhouse gas emissions abatement depends on an underlying consensus about numerous critical factors, few more central than the policy issue of how most effectively to control those emissions. That means considering the comparative virtues of a carbon (or carbon-equivalent) tax, a tradable permit system, or some coexisting hybrid of the two instruments. For a tax, determination of its dollar magnitude is critical. Its estimate is commonly derived from the so-called “social cost of carbon”—that is, the monetary deterrent against the damage an incremental ton of carbon dioxide (CO₂) would otherwise inflict on the world.

The prevailing estimate of the social cost of carbon is about \$40 per ton of CO₂ (or around 45 cents per gallon of gasoline), if imposed beginning in the year 2020. Without disputing the size of that number or the methodology on which it rests, I’ll try to illuminate the way in which the social cost of carbon (or any such global estimate) poses a dilemma when folded into an emerging US benefit–cost analytical framework that departs in scope from one that, in its focus on purely domestic impacts, has for decades underpinned the steadily growing field of environmental economics; and, in more recent years, has been reflected in specific cases of US environmental decisionmaking. But now, we see this departure playing out with the benefit–cost analysis underlying the US Environmental Protection Agency’s (EPA’s) recently finalized Clean Power Plan.

Background

A very brief review of the evolution of benefit–cost analysis in the United States

may provide a useful clue to the ongoing, if muted, controversy around which this latest perspective has stirred passions in both academic and policy circles. It is an odyssey that begins as an intellectual tour de force, proceeds through conceptual and institutional refinement, and, at the end, achieves operational and empirical legitimacy in regulatory and rulemaking authority.

Much credit for inspiring this multi-stage evolution should be accorded to Ronald Coase, who, in his 1960 book *The Problem of Social Cost* and follow-on writings, established the intellectual rationale for integrating public goods—with their exposure to nonmarket externalities—into economic orthodoxy. (Its landmark breadth and rigor notwithstanding, Coase’s work was not entirely a bolt from the blue: nearly a century earlier, British economist Arthur Pigou had proposed a tax on externalities.) In its most rudimentary expression, the problem Coase sought to overcome is one where, say, there is a downstream victim of toxic runoff freely discharged upstream—a market failure correctible by providing the downstream party redress through judicial or regulatory relief. (Think of CO₂ releases to the atmosphere instead of upstream pollution and the global climate regime instead of the downstream victim—and you’re practically up-to-date.)

In the years following, Coase’s theoretical foundation segued into a succession of milestones, each of which further strengthened the evolutionary process that led to today’s near fundamental inclusion of benefit–cost analysis in regulatory and environmental policymaking. A 1996 executive order underscored the importance of economic analysis in federal decisionmaking. In line with that presidential advisory, we reached another key juncture when the Office of Management and Budget (OMB) issued

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its Circular A-4 in 2003. That circular requires, and provides guidelines for the use of, benefit–cost estimates in federal agency rulemaking decisions.

Appropriately, EPA proceeded to apply OMB’s guidelines to its regulatory decisions—exercising its authority under the Clean Air Act and other legislation. The agency’s recently finalized Clean Power Plan, governing emissions from existing coal-burning power plants, is the latest and a major instance of applied benefit–cost analysis. But it is important to note—given the discussion that follows—that Circular A-4 was understood to be exclusively applicable to domestic benefits and costs. The Clean Power Plan relaxes that constraint by making the worldwide benefits of US abatement initiatives very much a part of its analytical architecture. It thereby signifies a new conceptual framework.

The Global Benefit–Cost Dilemma

If what I have sketched out above traces a reasonably faithful and linear time line of development, it means that we’re now at a point of distinct discontinuity in that path. Simply put, a nation that subscribes and is prepared to adhere to an international climate accord is expected to bear the cost

(in the form of the social cost of carbon or its equivalence) of its share of worldwide emissions—irrespective of whether that cost falls short of or exceeds the resulting domestic climatic benefits.

At first blush, this seems like a perversion of accepted analysis. In fact, it represents what is arguably the most effective way forward in confronting a challenge of global dimension. One needs merely to recognize the inherent inability to trace the path among one or more countries’ greenhouse gas releases, their ensuing presence in atmospheric concentrations, and the resultant damages inflicted on identifiable places around the world. It seems hardly necessary to belabor the point: How much Philippine inundation, Australian drought, or heightened African exposure to mosquito-borne disease originates, say, in Indian coal-burning power plants, EU tailpipe emissions, or fugitive US methane leakage is not measurable, even in principle. In short, the only test of a viable multicountry mitigation approach is whether the worldwide sum of each nation’s emissions abatement costs matches the avoidance of worldwide climatic damages resulting from such aggregated emissions declines.

For an instructive quantitative explication of this line of argument as it applies to the United States, consider a useful rundown prepared not long ago by Harvard economist and RFF University Fellow Robert Stavins. Stavins’s tabulation shows that, provisionally, US compliance costs with the Clean Power Plan are estimated to come to around \$9 billion. Against this outlay, domestic climate benefits (that is, the avoidance of US climatic damages that would otherwise occur) amount to about \$3 billion. To be sure, the net domestic climatic “loss” of \$6 billion becomes a net winner if as much as \$40 billion of “co-benefit” health

impacts (for example, reduced respiratory distress from particulate emissions) are thrown into the equation. No doubt, numerous other countries will enjoy such associated benefits as well. Some may even be tempted to make their support for climate policy conditional on those co-benefits. Still, in a purely global-warming context, our \$9 billion expenditure overwhelmingly redounds to the world as a whole to the tune of an estimated global benefit of \$31 billion.

Dissent, Assent

However they may appreciate the extent to which such global warming redress is grounded in ethical arguments, some scholars in both the economics and legal communities take major exception to what they see as an abandonment of established and sound benefit–cost principles—whether in the departure from the strictly domestic dimensions of OMB’s Circular A-4 or from its Coasian intellectual antecedents.

Economic Critique

Most economists appear supportive of the broadened framing of the benefit–cost paradigm. Still, one particularly strong dissent has come from Ted Gayer (of the Brookings Institution) and W. Kip Viscusi (of Vanderbilt University). These two scholars find no justification for US government officials going “outside the typical practice for defining the scope of benefit assessment”—that scope being limited, in their view, to purely domestic benefits. Breaching that limit by granting greenhouse gas reduction benefits to US citizens and noncitizens equally would, in their view, “substantially shift the allocation of societal resources. The global perspective would likely shift immigration policy to one of entirely open borders, as the benefits of granting citizenship to poor

immigrants from around the world would dominate any costs to current US citizens.” One can see how a position so rigidly framed might easily support judicial and policy challenges to regulatory actions such as the Clean Power Plan and thereby blur the thrust and implications of US climate mitigation initiatives.

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For what can be taken as a refutation of the Gayer–Viscusi stand—albeit one stated with a touch less certitude—one might usefully refer to the Interagency Working Group (IWG) on the Social Cost of Carbon’s recent response to comments on the social cost of carbon regulatory impact analysis. That document reviews numerous comments—ones both favoring and questioning a global benefit–cost perspective. Yet, even while acknowledging that the IWG departs from strict interpretation of OMB guidelines, the review concludes, “The only way to achieve an efficient allocation of resources for emissions reduction on a global basis is for all countries to base their policies on global estimates of damages and [the IWG] will therefore continue to recommend the use of global SCC estimates in regulatory impact



analyses.” And, in an aside that might well prompt a rebuttal from purists, the IWG describes Circular A-4 as “a living document, which may be updated as appropriate to reflect new developments and unforeseen issues.” Indeed, it describes OMB, an integral participant in the IWG’s work, as supportive of the focus on global damages.

Legal Critique

On the legal front, the underlying—and no longer seriously contested—reality is the Supreme Court’s 2007 decision obliging EPA to limit greenhouse gas emissions under provisions of the Clean Air Act. Predictably, the court did not indicate the specific ways in which EPA was to implement such a broad mandate. This fact has enabled proponents of the Clean Power Plan to cite those parts of the Clean Air Act

(in particular, Section 111(d)) as consistent with the court’s decision and therefore in support of EPA’s finalized Clean Power Plan ruling, while spurring its opponents to seek judicial redress from what they allege to be EPA’s questionable applications of the Clean Air Act.

An excellent guide to that debate is provided in a July 2015 *Common Resources* blog post by Nathan Richardson of the University of South Carolina Law School and an RFF visiting fellow. For example, actual implementation of EPA’s Clean Power Plan emissions rules under 111(d) falls to the states (either individually or in concert with other states) rather than individual power plants. But that devolution of responsibility under the Clean Air Act may be insufficiently tested, in Richardson’s view, to easily forestall legal chal-

lenge. Relatedly, the legitimacy of emissions trading is unclear. Another area of dispute concerns the extent to which—again, with specific applicability to implementation of the Clean Power Plan—Section 111(d) permits recourse to demand-side energy management and the use of renewables. In short, where there is such ambiguity, there is an opening for a litigious contest to assess more precisely the operational features of the Clean Power Plan.

Whether it will turn into an additional challenge is far from clear, but one unique line of argument hostile to the Clean Power Plan deserves to be noted. A widely publicized legal dissent against EPA's proposed rulemaking is contained in a 2014 comment submitted to EPA jointly by Professor Laurence Tribe (of the Harvard Law School) and the Peabody Energy Corporation.

A key feature of the Tribe–Peabody argument is its charge that EPA is in violation of the Due Process and Takings Clauses under the Constitution's Fifth Amendment (which prevent “the government from forcing some people alone to bear public burdens which, in all fairness and justice, should be borne by the public as a whole”). That violation, their comment notes, “is precisely the purpose of the [Clean Power Plan rule], forcing the United States' power plants and energy industry to bear the *global* [my italics] burden of lessening CO₂ emissions EPA's singling out of a mere handful of emitters and limiting (or curtailing) their property is exactly the type of overreaching the Fifth Amendment seeks to prevent.”

One wonders whether US ratification to the 1989 Montreal Protocol—designed to shield the globe from stratospheric ozone depletion—might, analogously, have been challenged on grounds that the cost of its global benefits was disproportionately borne by a handful of US chlorofluorocar-

bon producers. No matter: with respect to final adoption of EPA's Clean Power Plan ground rules, it may take some time for the legal skirmishing to run its course.

To embrace a global benefit–cost approach to greenhouse gas abatement is scarcely to wish away a variety of operational impediments that could impair its smooth implementation. Participation in an international accord by low-income developing countries could spur free-riding impulses by some of those countries. For all participating nations, reporting obligations must be scrupulously defined and observed. Recourse to retaliatory measures must be explicitly acknowledged and codified.

Nonetheless, in these and other respects, transitioning from a domestic to a global perspective hardly qualifies as the indefensible perfidy to established policy practices some critics may continue to claim. ●

This article originally appeared on RFF's blog, *Common Resources* (www.rff.org/blog).

FURTHER READING

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