Data Gaps Plague Cost-Benefit Analysis

The hyper-formalized version of cost-benefit analysis that has come to dominate agency practice assumes a world in which all (or nearly all) regulatory impacts can be quantified and expressed in dollars and cents. But in the real world, when it comes to regulatory benefits like public health and safety, ecosystems, or economic well-being, we just don’t have anywhere near sufficient data to undertake that kind of precise accounting.

This ends up making cost-benefit analysis a barrier to the kinds of regulatory safeguards that will be a crucial part of the Biden-Harris administration’s ability to address the enormous challenges facing the country today: the COVID pandemic; an economy in shambles; the call for racial justice; the climate crisis, and more. President Biden should issue a new executive order that would remove those barriers by allowing the agencies to realign their consideration of costs and benefits with their statutory missions and to deploy analytic tools that use the information we have rather than the information we wish we had.

The Problem

There are lots of different ways to analyze the costs and benefits of a regulation. But federal agencies and the OMB’s Office of Information and Regulatory Affairs (OIRA) have over the decades congealed on one in particular—a highly formalistic version of cost-benefit analysis grounded in the paradigm of Kaldor-Hicks efficiency. This kind of analysis involves comprehensive accounting of all costs and all benefits to society as a whole and emphasizes the calculation of net benefits in order to identify the alternative that maximizes overall social welfare. This analytic framework assumes a world in which all (or nearly all) relevant values can be quantified and expressed in monetary terms.

This has created a culture in which agencies are afraid to put rules forward unless they can monetize enough of the benefits to outweigh the costs.\(^1\) The result is to impose on agencies an often insurmountable burden of proof. This flies in the face of the Precautionary Principle – the idea that we should prevent harm before it happens – even if that requires acting before all the data are in.

And when it comes to the federal government’s most contentious and expensive regulations aimed at protecting things like public health, safety and the environment, all the data is most definitely not in. We know that various forms of pollution, unsafe working conditions, consumer products, and risky financial practices are causing harm and that curtailing them will prevent harm. We just can’t say precisely how much.

The Environmental Protection Agency (EPA) – often held up as one of the agencies where the practice of cost-benefit analysis is the most advanced and sophisticated – provides an instructive example.\(^2\) A recent empirical study looked at the major EPA rulemakings over a 13-year period, spanning the George W. Bush and Obama administrations, and found that in 80 percent of its cost-benefit analyses, the EPA was entirely unable to quantify whole categories of benefits that the agency itself described as “important, significant, or substantial.”\(^3\)
Of the dozens of pollutants the EPA regulates, there is really only one – particulate matter – for which the EPA has extensive data. For a whole set of reasons, particulate matter has been much easier to study than the others. Indeed, the vast majority of the benefits the agency is able to monetize (94 percent in the study cited above) are attributable to this one pollutant. And even the relatively big numbers the agency generates on particulate matter are far from complete, leaving out cancer and other long-term effects that are associated with human exposure but much trickier to measure.

The problem is so severe that in many instances, the EPA is entirely unable to quantify any of the impacts associated with the pollutants a regulation is actually aimed at controlling. In these instances, 100 percent of the agency’s monetized benefits estimate is usually attributable instead to the fact that the rule also has the ancillary effect of reducing particulate matter emissions. While perfectly legitimate as a matter of economic theory, the EPA’s heavy reliance on such “co-benefits” has landed the agency in political hot water as the right wing has latched onto this practice as a sign that agency is resorting to subterfuge to inflate its benefits numbers. (This kind of distortion of sound cost-benefit analysis practices to advance political ends is itself indicative of the intractable practical flaws that have long undermined the value of the methodology in regulatory decision-making.)

In all of these instances, the lack of quantification stems from inadequacies in the data. But that is to say nothing of the many values that resist quantification altogether but nonetheless arise with some frequency in regulatory decision-making—things like protecting the dignity of people using wheelchairs, reducing incidents of rape in prisons, or reducing the occurrence of backover crashes in which parents accidentally kill their own children.

Benefits that can’t be meaningfully quantified represent a significant and pervasive problem that makes the hyper-formalistic variety of cost-benefit analysis that now dominates agency practice unworkable much of the time. The point of a highly formalized cost-benefit analysis — and the source of its purported advantage over other decision-making tools — is to be able to identify the economically efficient (i.e., welfare maximizing) level of regulation. But where significant benefits (or costs) can’t be reliably quantified and monetized, net benefits cannot be meaningfully calculated, and identifying the alternative that maximizes net benefits is therefore impossible. In such circumstances, in the words of OIRA itself, “[cost-benefit analysis] is less useful, and it can even be misleading.”

The Solution

In most of our health, safety, and environmental statutes Congress directed agencies to use methods other than a formalistic, monetized cost-benefit analysis to set regulatory standards and to consider costs and benefits. One of the most prevalent methods, for example, is feasibility analysis. This is a kind of sequential cost-benefit analysis that first makes a threshold (usually non-quantified) finding that the pollutant or other hazard at issue is harmful such that there will be some significant benefit from regulation. It then makes a more granular examination of the technologies available for reducing pollution levels, their costs, and the financial capabilities of the industry, using this information to set a standard at the most stringent level that is economically and technologically feasible. Like cost-benefit analysis, this approach ensures that
costs and benefits of a rule are accounted for and that some check exists for keeping benefits appropriately balanced against costs. Its method for striking this balance, however, reflects Congress’s judgment that eliminating significant risks where feasible will ultimately serve the public interest better than hyper-monetization.

Feasibility standards have a strong track record in U.S. law. They are credited with bringing about dramatic improvements in air and water quality during the past four decades. Their ability to produce on-the-ground results is attributable in large part to the feasibility principle’s recognition of existing data gaps and its ability to work within them. There are other well-established decision-making tools for considering costs and benefits as well, including cost-effectiveness analysis, qualitative “Ben Franklin” cost-benefit analysis (i.e., an apples-to-oranges comparison to ensure costs not grossly disproportionate to benefits), multi-factor qualitative balancing, and scenario analysis.

Recognizing that pervasive data gaps make a hyper-formalistic version of cost-benefit analysis unworkable in many contexts and that there is no one-size-fits all tool for regulatory decision-making, President Biden should sign an executive order directing agencies to use the context-specific methods that Congress called for in their organic statutes for considering costs and benefits. The new order should also implement a set of specific practices aimed at elevating unquantified benefits and costs to the same level of attention and consideration accorded to quantified effects.

Potential Opposition

Some voices within the Democratic Party may argue that existing requirements in executive orders and guidance documents requiring the consideration of unquantifiable benefits are sufficient to address the problem of data gaps. But even though the executive orders and guidance documents require the agencies to include qualitative descriptions of unquantifiable benefits in their cost-benefit analyses, these admonitions have little practical effect. Agencies still feel enormous pressure to make their case on the numbers alone. This pressure is further fueled by Executive Order 12866’s requirement to calculate net benefits, which necessarily excludes any qualitatively expressed values. Some will argue that all we need is more research. While more research would likely be beneficial, there is good reason to believe that producing the kind of data that would be necessary to actually quantify the relevant effects would be neither easy or expedient. Many regulatory benefits involve complex systems, like ecosystems and climate, or long latency periods, like cancer—characteristics that make scientific study particularly challenging, expensive and time consuming. And, as noted above, some benefits of regulation cannot be monetized. Additionally, such research would likely become the subject of intense legal fights, much as we see today not just with climate change but even the health effects of particulate matter. In the meantime, we need to be clear-eyed about the limited data we have available.

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1 Cass R. Sunstein, The Office of Information and Regulatory Affairs: Myths and Realities, 126 HARV. L. REV. 1838, 1865-66 (2013) (“In the Obama Administration, it has been very rare for a rule to have monetized costs in excess of monetized benefits.”); Cass R. Sunstein, The Real World of Cost-Benefit Analysis: Thirty-Six Questions (and Almost as Many Answers), 114 COLUM. L. REV. 167, 180-81 (2014) (noting that where a regulation’s monetized benefits are less than monetized costs, “the agency is unlikely to attempt to go forward with this regulation,” and if it does, it “will not be easy to establish” that the benefits justify the costs); Lisa Heinzerling, Inside EPA: A Former Insider’s Reflections on the Relationship between the Obama EPA and the Obama White House, 31 PACE ENVTL. L. REV. 325, 352 (2014)(“OIRA’s fine cost-benefit sieve leads EPA personnel to be deeply wary of developing rules that have very high costs in relation to their quantified and monetized benefits.”).

2 See also John C. Coates IV, Cost-Benefit Analysis of Financial Regulation: Case Studies and Implications 124 YALE L. J., 882, 997-98 (2015) (presenting a series of case studies “suggest[ing] that the capacity of anyone . . . to conduct quantified CBA [] with any real precision or confidence does not exist for important representative types of financial regulation.”).


7 See supra note 1.
Specific provisions of a Biden executive order on cost-benefit analysis could include:

- Reiterating the Supreme Court’s admonition in *Michigan v. EPA* that there is no one-size-fits-all method for the consideration of costs and benefits and that it is “up to the agency to decide how to account for costs [and benefits]” by choosing among the wide array of tools available.
  
  o This choice should be tailored to the particular context in which the rulemaking arises, including:
    ▪ Attention to the feasibility of quantifying and monetizing relevant costs and benefits; and
    ▪ The agency’s statutory mandates.
  
  o OIRA should be required to defer to the agency’s choice of decision-making tool.

- Requiring the agencies to articulate the particular methods their organic statutes direct them to use in accounting for regulatory costs and benefits.

- Reaffirming that any attempt to characterize or quantify regulatory benefits should include co-benefits.

- Prohibiting calculation of net benefit unless all significant categories of benefit and cost can be effectively and non-controversially monetized, with only two specific exceptions:
  
  o Where net benefits are calculated in the context of a breakeven analysis; or
  
  o Where an incomplete benefits estimate exceeds a reasonably complete cost estimate and the net benefits estimate is clearly designated as a lower bound.

- Forbidding monetization of benefits (or costs) for which prices are not set in existing markets.

- Requiring any chart presenting a rule’s total quantified costs and benefits to:
  
  o Use a “+B” or a “+C” to indicate where significant benefits or costs could not be quantified;
  
  o List in narrative terms all significant categories of non-quantifiable benefits or costs; and
  
  o For any monetized estimates of non-market goods, to include an alternative valuation in natural units (lives saved, illnesses averted, acres of wetlands preserved, etc.).