The Common Sense Imperative of Benefit-Cost Analysis: An Old Idea with Compelling Public Interest Credentials

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Mr. Belzer's affiliation is for identification purposes only. This Perspective was written without the use of government time or other resources, and does not necessarily reflect the views of the Office of Management and Budget or any other government agency.

Benefit-cost analysis is not new, nor should it be controversial in any way. Rather, it is the common-sense way that people make decisions. Businesses use it to help decide whether to make capital investments, develop new products, or hire more employees. Workers use it to choose whether to work overtime, join a union, or change jobs. Consumers use it to determine whether to buy a new car or fix up the old one, paint their homes or install vinyl siding, or spend the evening at the Kennedy Center or the movies.

People routinely and intuitively use benefit-cost analysis to evaluate choices involving risk, some of which may seem simple or mundane. "Should I jaywalk across this busy street or walk to the corner and cross with the traffic light?" "Should I wear a helmet when riding my bicycle?" "Should I fly or drive to get to my vacation destination?"

But we also use benefit-cost analysis for difficult choices involving risk. "Should I submit to a coronary bypass or rely on drugs, diet, and exercise?" "Should I consent to radical surgery to remove a tumor or opt for a less invasive and disfiguring procedure combined with 'watchful waiting'?" "Should I choose hormone replacement therapy to control the effects of menopause and reduce my risk of heart attack and osteoporosis, even if it increases my chances of developing breast cancer?"

It stands to reason, then, that it also makes sense for the government to use benefit-cost analysis when it decides how others should spend their money. Side-impact protection is a good thing to have in an automobile, but how do you know when you've got enough? Surely oil spills ought to be prevented, but isn't there some point at which additional expenditures just aren't worth it? Everybody wants safe drinking water, but does it make sense to spend billions to remove the very last molecules of chemicals that pose uncertain risks even at high concentrations? Should we make every decision ad hoc, or is there a systematic way of approaching these choices?

Benefit-cost analysis enables us to discover how scarce resources can be devoted to their most valuable use. Doing anything less implies wasting these resources, whether they take the form of minerals, knowledge, or even lives.

Some people mistakenly think that benefit-cost analysis is preoccupied with the cost side of the ledger. Actually, economists try to measure "costs" not in terms of what must be paid but in terms of the *benefits foregone* because of this payment. The true cost of spending, say, $1 billion to reduce automotive emissions is the value of the benefits society would have reaped had this amount been spent instead on its best alternative use. These benefits might have taken a variety of forms, such as air pollution control elsewhere, automotive safety improvements, or improved highway engineering. Alternatively, it could have been spent on putting food on the table or sending the kids to college. Once "costs" are properly understood as "benefits foregone," the true nature of the comparison becomes clear: It is the tradeoff between the *benefits* of a course of action and the *foregone benefits of not choosing* another course of action. If this tradeoff did not exist, there would be no point in analyzing anything for there would be no scarcity in the world and we could have everything we wanted. We would possess both Aladdin's lamp and an infinite number of wishes.

THE MORAL ARGUMENT AGAINST BENEFIT-COST ANALYSIS

A variety of arguments have been raised against the performance and use of benefit-cost analysis in risk analysis and management. Typically these arguments display a religious fervor intended to impugn the character of benefit-cost advocates. "It is immoral and unethical to place dollar values on human life." "The environment is too precious to be traded for corporate profits." "We cannot allow public health to be sacrificed on the altar of economics." Economists have been slow to respond because they are trained to take individuals' moral judgments as given rather than as values to be manipulated in the service of a higher call.

Contrary to these rhetorical flourishes, benefit-cost

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analysis does not equate human lives with filthy lucre. Rather, it acknowledges what everyone knows to be true; that reducing risks to life and health and protecting the environment are indeed valuable things; that there are other things besides risk reduction that have value; and that resources spent inefficiently represent opportunities wasted.

Further, asserting that life and health are *priceless* is tantamount to claiming they are *worthless*. We make tangible commitments to obtain and protect that which we value. Those things we value highest earn our greatest sacrifice. It has always been so. The invention of quantitative benefit-cost analysis does not repudiate our values but instead reflects a desire to be more systematic and careful about affirming them.

HOW TODAY'S MORAL OPPONENTS OF BENEFIT-COST ANALYSIS WERE YESTERDAY'S PRINCIPLED ADVOCATES

Formal benefit-cost analysis has been around for more than a generation, yet the moralistic opposition to it is actually quite recent. Indeed, the federal government's first routine use of benefit-cost analysis was to justify public works projects, such as the construction of dams in the western States. Both the Army Corp of Engineers and the Interior Department's Bureau of Reclamation (BuRec) routinely used benefit-cost analysis to justify these projects.

Ironically, it was the nascent Environmental Protection Agency and public interest advocacy groups who championed benefit-cost analysis and rigorous procedures for the independent oversight of agencies' methods. The EPA funded and conducted much of the research exposing the BuRec's errors and quantifying the environmental harm caused by western dams. The environmentalists discovered that the vast majority of these federal water projects failed the test of net social benefits *once the analysis was performed correctly.* Neither the EPA nor the environmentalists raised moral objections to benefit-cost analysis, nor did they oppose making the demonstration of net social benefits a necessary condition for project approval. Rather, they argued vigorously that the BuRec consistently rigged its analyses to justify projects which would be unambiguously rejected on benefit-cost grounds had the analyses been conducted properly.

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Damming the West, Ralph Nader's Study Group Report on the Bureau of Reclamation published in 1973, documents in exhaustive detail the numerous errors the BuRec routinely committed. For example:

Costs and transfers misclassified as benefits: BuRec counted project labor costs as "employment opportunity" benefits, and counted the gains to subsidized California cotton farmers as benefits but ignored farm losses in the Deep South. The Nader Study Group noted that neither practice is correct.

Double counting of benefits: The BuRec double-counted numerous project benefits. The Nader Study Group pointed out, for example, that the BuRec improperly treated a single day spent boating, picnicking, and hiking as three "use days," thereby trebling the apparent value of recreation benefits.

Exaggerating benefits through fanciful scenarios of future calamities: The primary societal benefit of BuRec projects consisted of the incremental value of agricultural output on newly irrigated lands. But as the Nader Study Group noted, the value of this output was negligible because most of the additional crops produced were already in surplus. The BuRec also justified projects using dire forecasts of future worldwide drought and agricultural shortages, a practice the Nader Study Group characterized as "unjustified."

Failure to account for substitution risks: The BuRec claimed as benefits any environmental amenities it generated, but failed to deduct the value of environmental damages its projects caused. The Nader Study Group correctly noted that both the environmental damages caused by water projects and expenditures to mitigate these damages should be counted as costs.

Willingness to quantify benefits and costs dependent on political desire: The Nader Study Group identified numerous instances in which the BuRec "displayed an alarming inability" to quantify costs but "great alacrity" in quantifying benefits, even when the units of these costs were the same."Political opposition — not a lack of expertise — is the principal stumbling block preventing ecological quantification." They recommended strengthening independent oversight: "As long as the Bureau continues to collect faulty data, the General Accounting Office and the Office of Management and Budget should increase their supervision of Reclamation's benefit-cost estimates. . ."

Artificially low discount rates: BuRec consistently justified projects using discount rates as low as 2.5 percent, whereas the Nader Study Group recommended rates "in the vicinity of 10 percent." "Many current taxpayers who bear the real cost of the Bureau's projects won't even be alive to enjoy the future benefits." While acknowledging legitimate disagreement concerning the correct discount rate, they recommended that a single rate be used by all government agencies and that OMB should be empowered to set it. "If any existing agency is capable of making this kind of intertemporal judgment, it is the Office of Management and Budget. . ."

continued on next page

Performing analysis only after decisions have been made: The Nader Study Group found that the BuRec's National Environmental Policy Act analyses failed to take account of environmental costs in part because these studies were conducted too late to affect decision making. "Public hearings, announced through the local news media and in the *Federal Register*, should . . . be held . . . before beginning an economic feasibility study [i.e., benefit-cost analysis]."

Failure to verify benefit and cost estimates after the fact: Claimed environmental benefits often failed to materialize, and routine cost overruns were exposed only through the extraordinary efforts of external organizations, such as the GAO, the OMB, and the 1955 Hoover Commission reports. The Nader Study Group recommended that there be more oversight by GAO and OMB.

Sadly, federal agencies continue to routinely commit these errors, only now they do so to justify risk-related regulations rather than water projects. Many of those who railed against the misuse of benefit-cost analysis a quarter century ago are strangely silent today. Indeed, some strive mightily to thwart requirements for rigorous benefit-cost analysis, and to forbid its use for risk management decision making when obstructionism fails. As a last resort, they seek to justify regulations by allowing murky unquantifiables and imponderables to trump the best available quantitative analysis if the results fail to demonstrate net social benefits. Yet, 25 years ago they argued strenuously that if a federal project failed this test it should be abandoned forthwith. Said the Nader Study Group: "Projects that are not in the national interest should not continue to be adopted under the guise of economic desirability."

THE PROBLEM OF EQUITY

An important feature of benefit-cost analysis is that it follows the common sense ethical principle of treating everyone the same. A dollar's worth of benefit to the sharecropper gets exactly the same weight as a dollar's worth of benefit to the tycoon. Those who think that government policies and decisions are skewed in favor of the rich should be the strongest advocates of benefit-cost analysis, because it would end such favoritism.

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Many people also believe that the poor and other subpopulations deserve special consideration in risk management decision making. Benefit-cost analysis allows for this through the incorporation of explicit distributional weights, though it is rarely done in practice because of the difficulty of choosing such weights. Nevertheless, this is precisely what the Nader Study Group recommended in 1973:

"Policymakers should be informed as to who benefits and to what extent. The best method to incorporate distributional impacts into the Bureau's benefit-cost analysis would have the Bureau apply distributional weights that give appropriate preference to lower-income groups."

The Nader Study Group also offered a suggestion how this should be done:

"The Office of Management and Budget should designate relevant breakdowns of the population into specific income groups, which encompass all members of society from the poorest to the richest. One reason for placing the task of defining relevant target groups in the OMB is so all government agencies can use uniform categories to assist Congress in comparing impacts of alternative government expenditures. . .

"For each project purpose, the Bureau should estimate the number of beneficiaries likely to fall into the particular income categories and how much members of these groups will receive. By making distributional considerations explicit, policymakers will be better informed as to who receives the benefits. . ."

BACK TO THE FUTURE

We have become so preoccupied by the crisis of the moment that we have forgotten the path that led us here. Many will be surprised to discover how some players have "changed sides" and may want to explore further the reasons for this metamorphosis. But the fundamental concepts of benefit-cost analysis have not changed since 1973 even while the methods have improved. The argument for making public decisions based on net social benefit is as valid in 1995 for evaluating risk-based regulations as it was in 1973 for examining federal water projects. It's just common sense.