



By Robert N. Stavins

Is Benefit-Cost Analysis Helpful?

For many years, there have been calls from various quarters for greater reliance on the use of economic analysis in the development and evaluation of environmental regulations. As noted in previous columns, most economists would argue that economic efficiency — measured as the difference between benefits and costs — ought to be one of the key criteria for evaluating proposed regulations. Because society has limited resources, such analysis can help illuminate the trade-offs involved in making different kinds of social investments. In this sense, it would seem irresponsible not to conduct such analyses, since they can inform decisions about how scarce resources can be put to the greatest social good.

In principle, benefit-cost analysis, or BCA, can also help answer questions of how much regulation is enough. From an efficiency standpoint, the answer is simple — regulate until the incremental benefits from regulation are just offset by the incremental costs. In practice, however, the problem is much more difficult, in large part because of inherent problems in measuring marginal benefits and costs. In addition, concerns about fairness and process may be important economic and non-economic factors. Regulatory policies inevitably involve winners and losers, even when aggregate benefits exceed aggregate costs.

Over the years, policymakers have sent mixed signals regarding the use of BCA in policy evaluation. Congress has passed several statutes to protect health, safety, and the environment that effectively preclude the consideration of benefits and costs in the development

of certain regulations, even though other statutes actually require the use of BCA. At the same time, Presidents Carter, Reagan, Bush, Clinton, and Bush all introduced formal processes for reviewing economic implications of major environmental, health, and safety regulations. Apparently the Executive Branch, charged with designing and implementing regulations, has seen a greater need than the Congress to develop a yardstick against which regulatory proposals can be assessed. BCA has been the yardstick of choice.

It was in this context that a group of economists from across the political spectrum jointly authored an article in *Science* magazine, asking whether there is role for BCA in environmental, health, and safety regulation. That diverse group consisted of Kenneth Arrow, Maureen Cropper, George Eads, Robert Hahn, Lester Lave, Roger Noll, Paul Portney, Milton Russell, Richard Schmalensee, Kerry Smith, and myself. We suggested that BCA has a potentially important role to play in helping inform regulatory decisionmaking, though it should not be the sole basis for such decisionmaking. We offered eight principles.

First, BCA can be useful for comparing the favorable and unfavorable effects of policies, because it can help decisionmakers better understand the implications of decisions by identifying and, where appropriate, quantifying the favorable and unfavorable consequences of a proposed policy change. But, in some cases, there is too much uncertainty to use BCA to conclude that the benefits of a decision will exceed or fall short of its costs. Second, decisionmakers should not be precluded from considering the economic costs and benefits of different policies in the development of regulations. Removing statutory prohibitions on the balancing of benefits and costs can help promote more efficient and effective regulation.

Third, BCA should be required for all major regulatory decisions. The scale of a BCA should depend on both the stakes involved and the likelihood that the resulting information will affect the ultimate decision. Fourth, although agencies should be required to conduct BCAs for major decisions, and to explain why they have selected actions

for which reliable evidence indicates that expected benefits are significantly less than expected costs, those agencies should not be bound by strict benefit-cost tests. Factors other than aggregate economic benefits and costs may be important.

Fifth, benefits and costs of proposed policies should be quantified wherever possible. But not all impacts can be quantified, let alone monetized. Therefore, care should be taken to assure that quantitative factors do not dominate important qualitative factors in decisionmaking. If an agency wishes to introduce a “margin of safety” into a decision, it should do so explicitly. Sixth, the more external review that regulatory analyses receive, the better they are likely to be. Retrospective assessments should be carried out periodically. Seventh, a consistent set of economic assumptions should be used in calculating benefits and costs. Key variables include the social discount rate, the value of reducing risks of premature death and accidents, and the values associated with other improvements in health. Eighth, while BCA focuses primarily on the overall relationship between benefits and costs, a good analysis will also identify important distributional consequences for important subgroups of the population.

From these eight principles, we concluded that BCA can play an important role in legislative and regulatory policy debates on protecting and improving the natural environment, health, and safety. Although formal BCA should not be viewed as either necessary or sufficient for designing sensible public policy, it can provide an exceptionally useful framework for consistently organizing disparate information, and in this way, it can greatly improve the process and hence the outcome of policy analysis. If properly done, BCA can be of great help to agencies participating in the development of environmental regulations, and it can likewise be useful in evaluating agency decisionmaking and in shaping statutes.

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