

H. Market-Oriented Approaches Rather Than Direct Controls

Market-oriented approaches that use economic incentives should be explored. These alternatives include fees, penalties, subsidies, marketable permits or offsets, changes in liability or property rights (including policies that alter the incentives of insurers and insured parties), and required bonds, insurance or warranties.

I. Informational Measures Rather Than Regulation

If intervention is contemplated to address a market failure that arises from inadequate or asymmetric information, informational remedies will often be the preferred approach. Measures to improve the availability of information include government establishment of a standardized testing and rating system (the use of which could be made mandatory or left voluntary), mandatory disclosure requirements (e.g., by advertising, labeling, or enclosures), and government provision of information (e.g., by government publications, telephone hotlines, or public interest broadcast announcements). A regulatory measure to improve the availability of information (particularly about the concealed characteristics of products) provides consumers a greater choice, than a mandatory product standard or ban.

Specific informational measures should be evaluated in terms of their benefits and with a comprehensive view of their costs. Some effects of informational measures are easily overlooked. For example, the costs of a mandatory disclosure requirement for a consumer product will include not only the cost of gathering and communicating the required information, but also the loss of net benefits of any information displaced by the mandated information, the effect of providing too much information that is ignored or information that is misinterpreted, and inefficiencies arising from the incentive that mandatory disclosure may give to overinvest in a particular characteristic of a product or service.

Where information on the benefits and costs of alternative informational measures is insufficient to provide a clear choice between them, you should consider the least intrusive informational alternative sufficient to accomplish the regulatory objective. For example, to correct an informational market failure it may be sufficient for government to establish a standardized testing and rating system without mandating its use, because competing firms that score well according to the system should thereby have an incentive to publicize the fact.

III. Analytical Approaches

Both benefit-cost analysis (BCA) and cost-effectiveness analysis (CEA) provide a systematic framework for identifying and evaluating the likely outcomes of alternative regulatory choices. A major rulemaking should be supported by both types of analysis wherever possible. Specifically, you should prepare a CEA for all major rulemakings for which the primary benefits are improved public health and safety. You should also perform a BCA for major health and safety rulemakings to the extent that

valid monetary values can be assigned to the expected health and safety outcomes. For all other major rulemakings, you should carry out a BCA. If some of the primary benefit categories cannot be expressed in monetary units, you should also conduct a CEA.

A. Benefit-Cost Analysis

The distinctive feature of BCA is that both benefits and costs are expressed in monetary units, which allows you to evaluate different regulatory options with a variety of attributes using a common measure. This can be especially helpful in choosing the appropriate scope for your regulatory intervention. By measuring incremental benefits and costs of successively more stringent regulatory alternatives, you can identify the alternative that maximizes societal net benefits.

The size of net benefits, the absolute difference between total benefits and total costs, is the key to determining whether one policy is more efficient than another. That will be achieved at the point where the cost of a marginal increment in regulatory stringency is just matched by the marginal benefit. The ratio of total benefits to total costs is not a meaningful indicator of net benefits and should not be used for that purpose. It is well known that considering such ratios alone can yield misleading results.

Even when a benefit or cost cannot be expressed in monetary units, you should still try to measure it in terms of its physical units, and if it is not possible to measure the physical units, you should still describe the benefit or cost qualitatively. When important benefits and costs cannot be expressed in monetary units, BCA is less useful, and it can even be misleading, because the calculation of net benefits in such cases does not provide a full evaluation of all relevant benefits and costs.

You should exercise professional judgment in identifying the importance of non-quantifiable factors, where they exist, and assess as best you can how they might change the ranking of alternatives based on estimated net benefits. Non-quantifiable benefits or costs may be important in tipping an analysis one way or the other, but you should not use non-quantifiables as "trump cards," especially in cases where the measured net benefits overwhelmingly favor a particular alternative.

B. Cost-Effectiveness Analysis (CEA)

Cost-effectiveness analysis provides a rigorous way to identify options that achieve the most effective use of the resources available without requiring you to monetize all of the relevant benefits or costs. Generally, cost-effectiveness analysis is most helpful for comparing a set of regulatory actions with the same primary outcome (e.g., an increase in the acres of wetlands protected) or multiple outcomes that can be integrated into a single numerical index (e.g., units of health improvement).

Cost-effectiveness results based on averages need to be treated with great care. They suffer from the same drawbacks as benefit-cost ratios. The alternative that exhibits the smallest cost-effectiveness ratio

may not be the one that maximizes net benefits, just as the alternative with the highest benefit-cost ratio is not always the one that maximizes net benefits. Incremental cost-effectiveness analysis (discussed below) can help to avoid mistakes that can occur when policy choices are based on average cost-effectiveness.

CEA can also be misleading when the "effectiveness" measure does not weight appropriately the consequences of each of the alternatives. For example, when effectiveness is measured in tons of reduced pollutant emissions, cost-effectiveness estimates will be misleading unless the reduced emissions of diverse pollutants result in the same health and environmental benefits.

When you have identified a range of alternatives (e.g., different levels of stringency), you should determine the cost-effectiveness of each option compared with the baseline as well as its incremental cost-effectiveness compared with successively more stringent requirements. Ideally, your CEA would present an array of cost-effectiveness estimates that would allow comparison across different alternatives. However, analyzing all possible combinations is not practical where there are many options (including possible interaction effects). In these cases, you should use your judgment to choose reasonable alternatives for careful consideration.

Accuracy of CEA depends on the consistency of analysis across a diverse set of possible regulatory actions. To achieve consistency, you need to construct very carefully the two key components of any CEA: The cost and the "effectiveness" or performance measures for the alternative policy options.

With regard to measuring costs, you should be sure to include all the relevant costs to society—whether public or private. Rulemakings may also yield cost savings (e.g., energy savings associated with new technologies). The numerator in the cost-effectiveness ratio should reflect net costs, defined as the gross cost incurred in meeting the requirements (sometimes called "total" costs) minus any cost savings.

Where regulation may yield several different beneficial outcomes, a cost-effectiveness comparison becomes more difficult to interpret because there is more than one measure of effectiveness to incorporate in the analysis. To arrive at a single measure you will need to weigh the value of disparate benefit categories, but this computation raises some of the same difficulties you will encounter in BCA. If you can assign a reasonable monetary value to all of the regulation's different benefits, then you should do so, but in that case you will be doing BCA not CEA.

When you can estimate the monetary value of some but not all of the ancillary benefits of a regulation, but cannot assign a monetary value to the primary measure of effectiveness, you should subtract the monetary estimate of the ancillary benefits from the gross cost estimate to yield an estimated net cost. This net cost estimate for the rule may turn out to be negative—that is, the other benefits exceed the cost of the rule. If you are unable to estimate the value of