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## ABSTRACT

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# On Criteria for Evaluating Social Programs\*

This paper examines some recently proposed criteria for evaluation of the net social benefits of social programs.

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Hendren and Sprung-Keyser (2020) have recently renewed interest in an old criterion for evaluating government policy that differs from that used in conventional cost-benefit analyses. Their MVPF (marginal value of public funds) criterion is now advocated in some circles in economics. On close examination, the assumptions underlying the validity of the MVPF are very unattractive. It evaluates programs for a fixed government budget, whereas traditional cost-benefit analyses also consider the benefits of expanding the size of the budget to finance new programs. The traditional approach does not necessarily assume that the basket of current government programs is optimally determined, whereas the Hendren and Sprung-Keyser approach does.

A valid evaluation criterion for social programs weighs the social benefits of a program against its social costs. The literature focuses on “social welfare” as the proper outcome criterion. Respecting tradition, it will be invoked here even though the concept is well-known to be poorly defined and non-operational.

An aspect of traditional practice in the program evaluation literature is that any revenue collected by the government that is generated by a program is interpreted as a benefit to society to be spent by a benevolent government, either on the program in question or on other government programs.

Costs include output foregone of the society used to conduct the program. They include the welfare costs of tax avoidance activities like hiring tax accountants, reduced labor supply, asset transfers to evade taxation, and a variety of other creative behavioral responses and accounting practices.

The traditional approach evaluates programs by their net discounted social benefits. This approach includes the full costs of the program. The marginal value of public funds (MVPF) values benefits in the traditional way. However, by this criterion, costs are not the social opportunity costs of the program, but the opportunity foregone in withdrawing resources from other programs. This criterion implicitly assumes the optimality of the gov-

ernment budget but does not directly address what its size should be. It does not provide a proper criterion for evaluating programs that expand or contract the size of government, although advocates often use it this way. Thus, for example, MVPF cannot be used to evaluate the social benefit of expanding the entire government budget to fund a new program.

For specificity, consider a child development program that reduces crime. Such a reduction boosts the welfare of citizens by raising expected utility (e.g., less threat to life) of agents and reduces costs of police and prisons. How should these benefits and costs be counted? Adopting the convention of a social planner and letting  $W$  denote a “social welfare function”  $W$  as a criterion, the following points are obvious:

1. Any direct gain in welfare of society ( $\Delta W$ ) is a benefit. This welfare could include savings on private safety costs (alarms, keys, watchmen, etc.) as they translate into enhanced welfare (i.e., the value of reductions in costs multiplied by the marginal social utility of income).
2. Letting  $C$  be direct cost, the cost to society (prisons, police, etc.) of the program is reduced ( $-\Delta C$ ) with an associated reduction in the welfare cost of financing these costs. Let  $\phi$  be the marginal welfare cost from tax avoidance. In this notation,  $(-\Delta C)(1 + \phi)$  is a cost reduction available to be spent on social welfare.
3. Let the marginal direct expenditure for the program be  $\Delta E$ . It is raised by distorting taxation. The total cost of the expenditure is  $(1 + \phi)\Delta E$ . The net social benefit of the program (NSB) is (accounting for any induced cost reductions):

$$\Delta W - (\Delta E - \Delta C)(1 + \phi) = \text{NSB}. \tag{1}$$

We use a common value numeraire for all elements in this equation. If  $\text{NSB} > 0$ , it is optimal to undertake the program, taking as a baseline any distortions in the rest of the economy. A proper accounting would correct for such distortions, but we follow

current practice and ignore the issue here (see, however, Drèze and Stern, 1987). The following expression evaluates welfare gains:

$$\begin{aligned}\Delta W &> (\Delta E - \Delta C)(1 + \phi) \\ \Rightarrow \Delta W + (\Delta C)(1 + \phi) &> (\Delta E)(1 + \phi).\end{aligned}\tag{2}$$

This expression assumes that a dollar benefit is evaluated equally by all parties and that all parties are equally valued. Government cost is placed on the same footing as private cost. Similarly with government benefits.

The Benefit Cost Ratio (BCR) as defined by Hendren and Sprung-Keyser is:

$$\text{BCR} = \frac{\Delta W + \Delta C(1 + \phi)}{\Delta E(1 + \phi)}.\tag{3}$$

The marginal value of public funds is:

$$\text{MVPF} = \frac{\Delta W}{(\Delta E - \Delta C)(1 + \phi)}.\tag{4}$$

Assuming that the size of the government budget is optimally determined so that the marginal social benefit of expenditure equals marginal social cost, Hendren and Sprung-Keyser propose to rank programs by the MVPF criterion. Using BCR is characterized as a misleading traditional approach. In fact, neither criterion is appropriate. The appropriate criterion is that  $\text{NSB} > 0$ , which is both obvious and traditional. Trivially,  $\text{NSB} > 0 \Leftrightarrow \text{BCR} > 1$  and  $\text{MVPF} > 1$ .

For a fixed government budget  $\bar{E}$  for expenditures on programs denoted by  $j \in \{1, \dots, J\}$  where  $E_j$  is the expenditure on  $j$  and  $\sum_{j \in \{1, \dots, J\}} E_j \leq \bar{E}$ , the appropriate criterion for the choice of a program given a fixed budget is to choose the set of programs  $\mathcal{J} \subset \{1, \dots, J\}$

that maximizes  $\sum_{j \in \mathcal{J}} \text{NSB}_j$  so that  $\text{NSB}_j \geq 0$  and  $\sum_{j \in \mathcal{J}} E_j \leq \bar{E}$ . The proper criterion for answering the question of whether or not a program that expands the overall budget should be implemented relaxes the constraint  $\sum_{j \in \mathcal{J}} E_j \leq \bar{E}$ . MVPF takes  $\bar{E}$  (the government budget) as given and asks for programs with the highest value added per unit expenditure for a fixed budget (4). BCR does not take the budget as fixed but instead seeks to determine its size and finance programs with net social benefits.

Hendren and Sprung-Keyser suggest that programs be ranked on the basis of MVPF and not BCR and give an example where MVPF is very high, whereas BCR is very low. Such a comparison is meaningless. For the same NSB, it follows mechanically from (3) and (4) that  $\text{MVPF}_j > \text{BCR}_j$  as long as  $\Delta C_j > 0$ . No special advantage accrues to MVPF. It confuses a lot of issues. A program with a low NSB can have a high MVPF. Picking programs based on MVPF can, in fact, be a poor guide to policy. It greatly favors programs that produce government revenue that offsets direct costs and not necessarily programs with the greatest social benefit.

Thus, consider a program with  $\Delta W = 500$  and  $(\Delta E - \Delta C)(1 + \phi) = 100$ , so  $\text{NSB} = 400$  and the  $\text{MVPF} = 5$ . Consider a rival program with  $\Delta W = 100$ , but  $(\Delta E - \Delta C)(1 - \phi) \doteq 0$ , so  $\text{NSB} \doteq 100$ . Let  $\Delta E = 100$  for both programs, so that  $\bar{E}$  remains the same across the two candidate programs. The program with the higher net social benefit has a  $\text{MVPF} = 5$  while the program with the lower net social benefit has a virtually infinite MVPF. MVPF gives a government bureaucrat delight, but not a social planner.

A crucial assumption invoked in the use of MVPF is that the government budget is optimally allocated. Suppose that inefficient programs are in place, as has been amply demonstrated in much previous research. If programs are, in fact, socially inefficient, as gauged by  $\text{NSB}_j$ , a high  $\text{MVPF}_j$  might well characterize a socially inefficient program, so that choosing  $j$  on the basis of  $\text{MVPF}_j$  picks the best of a bad lot.

$\text{NSB}_j$  assumes nothing about the optimality of all government expenditure but takes

existing distortions in society as given. It starts from the status quo, which may be highly distorted (see the adjustments for distortions discussed in Drèze and Stern, 1987).

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