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ON CRITERIA FOR EVALUATING SOCIAL PROGRAMS

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ABSTRACT

This paper examines the economic foundations of some recently proposed criteria for evaluating the benefits of social programs. These criteria are appropriate for comparing a class of revenue-constant policies. They replace foundational principles of social opportunity costs with accounting conventions from the point of view of government bureaucrats. They do not address the question of social optimality associated with programs that expand or contract the government budget.

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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 of economics. On close examination, the assumptions justifying the validity of the MVPF are very special and generally at odds with the foundational principles of cost-benefit analysis and the basic economics of social opportunity costs. It compares a class of programs with overall identical governmental revenue requirements using a government cash-flow perspective and not a social optimality point of view. It is silent on how the funds available to governments should be determined or evaluated. Traditional cost-benefit analyses consider the benefits of expanding the size of the budget to finance new programs and are not restricted to the particular class of comparisons for which MVPF is useful.

A valid evaluation criterion for social programs weighs the social benefits of a program against its social costs. It answers whether or not a program expands or contracts the social utility possibility frontier.

Any revenue collected by the government that is generated by a program can be used to benefit society, either for the program being evaluated, for other government programs, or for tax rebates to society. A distinction is made between the nominal government budget established by law and the effective budget that fixes net revenues received from the operation of all programs.

Costs of a program include output foregone by the society used to finance the program. They include the welfare costs of tax avoidance activities like hiring tax accountants, reduced labor supply, asset transfers and other activities to evade taxation, and a variety of other 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. It computes the net social benefit (NSB) and ranks programs by it. Small-scale programs that benefit target groups are often implemented by society because of implicit welfare weights assigned to those groups, so, although the group served by the program may be small, and the net monetary benefits may be small as well, the outcomes are heavily upweighted.

The MVPF is a ratio of benefits to net revenue. It values benefits in the traditional way. However, it does not indicate the magnitude of net social benefits. By this criterion, the relevant costs are not the social opportunity costs of the program but rather the opportunities foregone in withdrawing resources from other government programs. MVPF is silent on the optimality of the government budget and 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 the government, although advocates often use it this way.

Thus, for example, MVPF cannot be used to evaluate the social benefits of expanding the government budget to fund a new program. It is reliable for comparing the effectiveness of programs with the same budget (and hence the same welfare costs) but is not reliable for comparing programs with different implications for the size of government budgets. MFPV favors programs with the greatest "bang-for-the-buck'' for the same bucket of bucks. It does not help us decide what size bucket to use. We analyze these issues more formally in the attached appendix.

For specificity, consider a child development program that reduces crime. Such a reduction boosts the welfare of citizens by raising expected utility (e.g., reducing threats 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, the following points are obvious:

1. Any direct gain in welfare of society is a benefit B_j. This welfare could include savings on private safety costs (e.g., alarms, keys, watchmen) as they translate into enhanced welfare (i.e., the value of reductions in costs multiplied by the marginal social utility of income). It could also include the earnings gains to participants and the enhanced altruism of members of the larger society.

2. Let D_j be the direct cost to society (e.g., prisons, police). It may be reduced by a successful program at, say, marginal rate ω_j. Thus, $-\omega_j D_j$ is the associated reduction in the marginal cost of financing, for example, the criminal justice system. Let ϕ be the marginal welfare cost from tax avoidance.[1] At the margin, it is a real cost to society. In this notation, $(-\omega_j D_j)(1+\phi)$ is a marginal social cost reduction attributable to the program available to be spent on social welfare, including rebating taxes to citizens.[2]

3. The marginal direct expenditure on the program, D_j, is commonly regarded as the cost of a program, although it is only part of the true cost. It is usually raised by distorting taxation. The total cost of the direct expenditure is $(1+\phi)D_j$. The marginal net social benefit of the program (NSB_j) is (accounting for any induced cost savings):

$$\mathrm{NSB}_j := B_j - D_j\left(1-\omega_j\right)\left(1+\phi\right). \tag{1}$$

We use a common value numeraire for all elements in this equation. If $\mathrm{NSB}_j > 0$, undertaking the program enhances the social utility possibility frontier, taking as a baseline

[1]This is viewed as a local approximation to what may be a highly non-linear tax schedule.

[2]To illustrate further how ϕ operates, consider a program that increases the skills of its participants and thus their labor income, like the Perry Preschool Project. This gain is an expansion of the social utility possibility frontier. García et al. (2021) quantify this gain in terms of before-tax income. They allow the government to tax this gain. If the government redistributes the fraction of the gain that it taxes through lump sums without transaction costs, then there is no additional cost to be quantified. However, in most tax codes, the government would make the redistribution by adjusting the corresponding marginal tax rate, affecting the additional *marginal* cost to society of ϕ.

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, who discuss the issue in depth). Expression (1) is valid for small changes at the margin or large changes provided that D_j, ω_j, and ϕ are defined appropriately.

The following expression evaluates whether welfare gains are achieved by the program:

$$\begin{aligned} & B_j > D_j\left(1-\omega_j\right)(1+\phi) \\ \Rightarrow\ & B_j+\omega_j D_j(1+\phi) > D_j(1+\phi). \end{aligned} \tag{2}$$

This expression is valid for both marginal and non-marginal changes. It assumes that a dollar of 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.

Of course, in practice, programs that are effective in targeting particular groups of interest may receive attention if they do not provide net benefits to the wider population. This takes us into the broader discussion of "welfare weights," and the warm glow often associated with such programs. However, even if interest focuses on a particular subgroup, it is still of interest to determine if a program so targeted generates net benefits.

In our notation, the benefit-cost ratio defined by Hendren and Sprung-Keyser (2020) is:

$$\mathrm{BCR}_j=\frac{B_j+\omega_j D_j(1+\phi)}{D_j(1+\phi)}.^{3} \tag{3}$$

[3] In their paper, they assume $\phi=0$ (i.e., they ignore the cost of distorting taxation). Equation (3) accounts for the costs of distorting taxation. If the programs being compared have the same budget D_j, the social cost of funds is equal for them, in which case MVPF gives a proper ranking of the benefits per unit of

Their marginal value of public funds is:

$$\mathrm{MVPF}_j = \frac{B_j}{D_j\,(1-\omega_j)\,(1+\phi)}.^{4} \tag{4}$$

This shifts a term in the numerator of (3) to the denominator of (4).

Hendren and Sprung-Keyser (2020) propose to rank programs by the MVPF criterion. They correctly claim that BCR_j is not an appropriate criterion. In fact, neither BCR_j nor MVPF_j is appropriate under general conditions. The only appropriate criterion for determining social optimality is NSB_j, which is both obvious and traditional. Trivially, $\mathrm{NSB}_j > 0 \Leftrightarrow \mathrm{BCR}_j > 1$ and $\mathrm{MVPF}_j > 1$. Any ordering among the two ratio measures is meaningless from the point of view of social optimality (shifting the social utility possibility frontier outward).

Taking a standard economic approach to decision making, for a fixed government budget $\bar{D}$ for direct expenditures on programs denoted by $j \in \mathcal{J}$ where D_j is the expenditure on j and $\sum_{j\in\mathcal{J}} D_j \leq \bar{D}$, the appropriate criterion for the choice of a program given a fixed budget, is to choose the set of programs $\mathcal{J} = \{1,\ldots,J\}$ that maximizes $\sum_{j\in\mathcal{J}} \mathrm{NSB}_j$ so that $\mathrm{NSB}_j \geq 0$ and $\sum_{j\in\mathcal{J}} D_j \leq \bar{D}$. The proper criterion for answering the question of whether or not a program that expands the overall budget should be implemented recognizes the social marginal value of public expenditure (i.e., the value placed on relaxing $\bar{D}$). We formally characterize the social marginal value of public expenditure in our technical appendix. MVPF ignores the entire issue of the appropriate scale of the budget, adopts the stance of a fixed (revenue constant) budget never determined, and evaluates programs on the basis of the highest value added per unit of net expenditure, counting any revenue to the government resulting from the program as part of net expenditure. It is a cash-flow measure that determines the best

governmental cost but is not a reliable guide for programs that expand or contract the overall budget. For example, it is not well designed to evaluate President Biden's massive Build Back Better program.

[4] In their notation, $D_j\,(1-\omega_j)\,(1+\phi) =: C_j + E_j$, although they assume $\phi = 0$.

use of a given revenue stream. NSB does not ignore the budget or the social cost of public funds, but instead seeks to determine its size and to propose programs with net social benefits.

Hendren and Sprung-Keyser (2020) suggest that programs be ranked on the basis of MVPF and not BCR. Toward that end, they give an example where MVPF is very high, whereas BCR is very low. Such a comparison is meaningless. For the same NSB_j, it follows mechanically from (2), (3), and (4) that $\mathrm{MVPF}_j > \mathrm{BCR}_j$ as long as $D_j > 0$. No special advantage accrues to MVPF and 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 favors programs that produce government revenue that offsets direct costs (high ω_j) and not necessarily programs with the greatest social benefit, including the opportunity cost of public funds. MVPF is a throwback to mercantile thinking that values benefits to governments instead of benefits to societies.

Thus, consider a program with $B_j = 500$ and $D_j\,(1-\omega_j)\,(1+\phi) = 100$, so $\mathrm{NSB}_j = 400$ and $\mathrm{MVPF}_j = 5$. Consider a rival program with $B_j = 100$, but $D_j\,(1-\omega_j)\,(1+\phi) \doteq 0$, so $\mathrm{NSB} \doteq 100$. Let $D_j = 100$ for both programs so that $\bar{D}$ remains the same across the two candidate programs. The program with the higher net social benefit has a $\mathrm{MVPF}_j = 5$, while the program with the lower net social benefit has a virtually infinite MVPF_j.

MVPF gives a government bureaucrat delight, but not a social planner. MVPF analyzes a limited class of revenue-constant programs but does not determine what their optimal revenue streams should be. Advocates suggest using welfare weights to break MVPF ties (e.g., Finkelstein and Hendren, 2020). None of this is necessary when using NSB_j, although, in practice, society often heavily weights the benefits received by targeted programs, so welfare weights are implicitly used.

If programs are, in fact, socially inefficient, as gauged by NSB_j, a high MVPF_j might well characterize a socially inefficient program, where resources are better left in the private sector.

NSB_j assumes nothing about the optimality of government expenditure but takes existing distortions in society as given. It starts from the status quo, which may be highly distorted. It simply answers the question of whether expenditures on j expand the utility possibilities frontier without taking a position on distributional issues, although they are implicitly taken in evaluating many policies. Drèze and Stern (1987) discuss appropriate adjustments for distortions. We develop these arguments formally in the attached appendix, where we derive the marginal value of public expenditure using basic principles of economics as opposed to accounting.

Technical Appendix

We analyze the basic problem of program evaluation from an economy-wide perspective: Does the program raise the productive capacity of the economy with production defined broadly? Does it enlarge the utility possibilities frontier? In principle, it does not necessarily worry about issues of distribution, just what is available to be redistributed. It allows for altruism on the part of society and determines the marginal social value of government expenditure (MVPE).

For program $j \in \mathcal{J}$, direct expenditure per recipient is $\bar{D}_j$, benefit per recipient is $\bar{B}_j$, cost per recipient is $\bar{C}_j$, and the number of recipients is N_j. We start with the most elementary version of the problem and then consider a more general formulation.

Fundamental Relationships. The contribution of program j to welfare (i.e., expansion or contraction of the utility possibilities frontier or production possibilities frontier) is:

$$N_j \left(\bar{B}_j - \bar{C}_j\right) \tag{A.1}$$

and the net contribution over all programs is

$$\sum_{j \in \mathcal{J}} N_j \left(\bar{B}_j - \bar{C}_j\right). \tag{A.2}$$

The cost per recipient of program $j \in \mathcal{J}$ includes:

(a) The direct cost per participant (financed by taxes) is $\bar{D}_j$.

(b) Program costs $\bar{C}_j$ include direct costs ($\bar{D}_j$) less offsetting revenue gains $\omega_j \bar{D}_j$ so net costs to the government are $\bar{R}_j := (1 - \omega_j)\,\bar{D}_j$. However, these costs give rise to welfare costs (e.g., tax avoidance costs) ϕ per unit of revenue raised. Thus, the total social cost is $\bar{R}_j (1+\phi)$. These can be interpreted as marginal costs.

The benefit per recipient of program $j \in \mathcal{J}$ includes:

(a) Direct benefits to recipients (their welfare): $\bar{U}_j$.

(b) There may be altruistic enjoyment of benefits to recipients by the rest of society (warm glow benefits): $\bar{W}_j \left(\bar{U}_j\right)$. This is the value placed by society on the well-being of each participant.

Thus, $\bar{B}_j = \bar{U}_j + \bar{W}_j \left(\bar{U}_j\right)$.

Total net benefits over all programs are:

$$\begin{aligned}
\text{Total Benefits} &= \sum_{j \in \mathcal{J}} N_j \left[\bar{B}_j - \bar{C}_j\right] \\
&= \sum_{j \in \mathcal{J}} N_j \left[\bar{B}_j - (1+\phi)\, \bar{R}_j\right] \\
&= \sum_{j \in \mathcal{J}} N_j \underbrace{\left[\bar{U}_j + \bar{W}_j \left(U_j\right) - \left(1-\omega_j\right)(1+\phi) \bar{D}_j\right]}_{\text{computed per recipient of } j \in \mathcal{J}}, \qquad \text{(A.3)}
\end{aligned}$$

where $N_j \left[\left(1-\omega_j\right)(1+\phi)\, \bar{D}_j\right]$ is the true social cost of program $j \in \mathcal{J}$, $\bar{R}_j$ is the net revenue per recipient that it collects, and $\bar{D}_j$ is its direct cost.

There are Two Types of Budgets.

$$\text{Nominal Budget} : \sum_{j \in \mathcal{J}} N_j \bar{D}_j =: \bar{D}^N \text{ (fixed direct cost)} \qquad \text{(A.4)}$$

and

$$\text{Revenue Requirements}: \sum_{j \in \mathcal{J}} N_j \bar{D}_j \left(1 - \omega_j\right) =: \bar{D}^R =: \bar{R}, \tag{A.5}$$

where $\bar{R} = \sum_{j \in \mathcal{J}} \bar{R}_j$. We work with (A.4), respecting actual budgetary practice.

What is the Best Program? The answer to this question crucially depends on what can be chosen under the nominal budget, and whether there are "voltage effects" (i.e., departures from constant returns to scale). See List (2022).

The social planner solves the following maximization problem:

$$\max_{N_j} \sum_{j \in \mathcal{J}} N_j \left(\bar{B}_j - \bar{C}_j\right) \tag{A.6}$$

subject to the budget in Equation (A.4) so that the first-order Kuhn-Tucker conditions are

$$N_j \left(\bar{B}_j - \bar{C}_j\right) - \lambda \bar{D}_j \geq 0 \text{ for } j \in \mathcal{J}, \tag{A.7}$$

where λ is the marginal social value of public expenditure. As written, this maximization problem has a linear structure due to the constant returns to scale assumption. Thus, the optimal program j^* is

$$j^* = \arg\max_{j \in \mathcal{J}} \{\left(\bar{B}_j - \bar{C}_j\right) - \lambda \bar{D}_j : \left(\bar{B}_j - \bar{C}_j\right) - \lambda \bar{D}_j > 0\}. \tag{A.8}$$

Notice that there may be no optimal program (i.e., j^* may live in the null set) in the linear case analyzed here. The rule for optimality is to pick the program with the highest gradient.

The optimal number of participants is

$$N_{j^*} = \frac{\bar{D}^N}{\bar{D}_{j^*}} \tag{A.9}$$

and the marginal social value of the government budget is:

$$\lambda^* = \frac{\bar{B}_{j^*} - \bar{C}_{j^*}}{\bar{D}_{j^*}}, \tag{A.10}$$

which is the MVPE and is nothing more that net social benefit relative to direct cost.[5]

The MVPE can be written as:

$$\begin{aligned}\lambda^* &= \frac{\bar{B}_{j^*} - \bar{C}_{j^*}}{\bar{D}_{j^*}} \\ &= \underbrace{\left[\bar{U}_{j^*} + \bar{W}_{j^*}\left(\bar{U}_{j^*}\right)\right]/\bar{D}_{j^*}}_{\text{Social Benefit per Dollar of Expenditure in Program } j^*} - \underbrace{\left[\left(1-\omega_j^*\right)(1+\phi)\right]}_{\text{True Social Cost per Unit of Program } j^*}\end{aligned} \tag{A.11}$$

This is the net social gain per unit of direct expenditure at the margin. Multiply both sides of Equation (A.11) by $\bar{D}_{j^*}$ to obtain the marginal value of public expenditure *per recipient* of the program:

$$\begin{aligned}\lambda^* \bar{D}_{j^*} = &\underbrace{\left[\bar{U}_{j^*} + \bar{W}_{j^*}\left(\bar{U}_{j^*}\right)\right]}_{\text{Social Benefit per Recipient of Program } j^*} - \underbrace{\left[\left(1-\omega_j^*\right)(1+\phi)\right]\bar{D}_{j^*}}_{\text{True Cost per Recipient of Program } j^*} \\ &=: \text{ Net Social Benefit per Recipient of Program } j^*.\end{aligned} \tag{A.12}$$

Allowing for Voltage Effects

More generally, $\bar{B}_j$ may depend on N_j and there may be diminishing returns to scale ("voltage effects"). Scale effects may occur for costs $\bar{C}_j$ as well. Then, in place of first-order condition

[5] λ^* may be a lower bound for the MVPE because the solution is at a corner.

(A.7), we have (for fixed ω_j and ϕ)

$$\begin{aligned}&\bar{U}_j + \bar{W}_j\left(\bar{U}_j\right) - \left(1-\omega_j\right)(1+\phi)\bar{D}_j \\ &\quad + N_j\left[\frac{\partial \bar{U}_j}{\partial N_j} + \frac{\partial \bar{W}_j\left(\bar{U}_j\right)}{\partial N_j} - \left(1-\omega_j\right)(1+\phi)\frac{\partial \bar{D}_j}{\partial N_j}\right] \geq \lambda \text{ for } j \in \mathcal{J}.\end{aligned} \tag{A.13}$$

These conditions determine the optimal number of recipients. λ is determined in the usual way using (A.13) and (A.4) for the optimal N_j (see Mas-Colell et al., 1995).

Interpreting the Net Social Benefit

The expressions in Equations (A.12) and (A.13) can be computed for any program $j \in \mathcal{J}$. Programs can be ranked with respect to their marginal value of public expenditure *per recipient* or net social benefit per recipient. In our constant returns to scale example, j^* is the best program, which could be none at all. In such case, no program should be implemented. Standard program-evaluation analysis suggests that programs should be implemented if their net present value per recipient exceeds zero. The net social benefit per recipient allows ranking all programs, although it is often essential to account for $\bar{W}_j\left(\bar{U}_j\right)$ among the benefits. NSB_j can be trivially rescaled to account for the total benefits for all recipients.

Alternatives to the Net Social Benefit

We now clarify the relationship of the net social benefit per recipient of a program $j \in \mathcal{J}$ (NSB_j) with other parameters discussed in the literature.

Benefit-Cost Ratio. The benefit-cost ratio with the direct cost per recipient in the denominator (adjusted for the deadweight loss):

$$\text{BCR}_j = \frac{\bar{B}_j + \omega_j\,(1+\phi)\,\bar{D}_j}{(1+\phi)\bar{D}_j}. \tag{A.14}$$

This parameter is intuitive. The numerator terms are all due to benefit and behavior changes caused by the program (e.g., increased income or reduced incarceration costs due to improvements in skills generated by the program with corresponding reduced welfare cost). The denominator term arises from direct expenditure on the program. Heckman et al. (2010) present estimates of BCR_j for the Perry Preschool Project for $\phi \in \{0, 0.5\}$. García et al. (2020) present estimates of BCR_j for the Carolina Abecedarian and Carolina Approach to Responsive Education Projects. They provide estimates for several values of ϕ.

Marginal Value of Public Funds (MVPF). The MVPF advocated by Hendren and Sprung-Keyser (2020) moves the revenue generated by the program evaluated, multiplied by the resulting welfare cost, to the denominator:

$$\text{MVPF}_j = \frac{\bar{B}_j}{(1-\omega_j)\,(1+\phi)\bar{D}_j} \tag{A.15}$$

for $\phi = 0$.

Why the MVPF Is, in General, a Poor Guide of Social Policy

1. In general, it is no guide to the proper scale of the programs being evaluated. The assumption that ϕ can be ignored is appropriate in a very narrow set of circumstances: comparing two programs with the *same* direct budget $\bar{D}_j$. The program with the greater "bang-for-the-buck" is clearly preferred, where part of the bang arises from the tax revenue generated by the program. Few choices among programs have this feature.

2. More generally, MVPF is a useful guide for comparing revenue-constant policies that

maximize (A.3) subject to the constraint (A.5).[6] Fixing government revenue is sometimes stated as a goal of policies. For a given $\bar{D}^R = \bar{R}$, the marginal social cost of funds is the same for all uses of funds. However, analysis of this class of policies entails tabulations of $\bar{B}_j$ and $\bar{C}_j$ but also the compensatory adjustment in the remaining budget required to keep $\bar{R}$ fixed.

3. Unlike the NSB_j, the MVPF_j ignores ϕ and thus does not account for the distortions generated when raising taxes to pay for social programs with different budget requirements.

4. Our derivation of MVPE as the multiplier on the social direct expenditure constraint is straightforward. Its counterpart in the literature of MVPF uses (A.5) as the relevant constraint.

5. Unlike the NSB_j, the MVPF_j cannot rank all programs. To see this, note that there could exist multiple programs with the same MVPF_j or those for which $(1 - \omega_j)(1 + \phi)\bar{D}_j \to 0$. All such programs have $\text{MVPF}_j \to \infty$ and ranking them is impossible by definition. Hendren and Sprung-Keyser (2020) recognize these problems and suggest additional steps when using MVPF_j to rank policies: (i) rank policies with "similar budgets" (see Finkelstein and Hendren, 2020 for additional discussion on this point); and (ii) when using MVPF_j, they suggest that programs with "similar MVPFs" should be compared using "social welfare weights," which is sometimes contested in the literature (Harberger, 1978). NSB_j does not require using weights, but in practice they are applied when targeting programs to particular populations (e.g., disadvantaged black people) with different implications for the government budget.

6. If the government faces a type of Laffer Curve, it could be that $(1 - \omega_j)(1 + \phi)\bar{D}_j < 0$. The program is a money pump. While having a negative MVPF_j, it would nonetheless expand social welfare gauged by NSB_j.

[6]Even if the correct budget is (A.5), government expenditure is incurred to finance the program; the social cost of raising the revenue is ϕR.

7. Unlike the MVPF_j, the NSB_j can rank any set of programs, even if all of them have dissimilar budgets or negative net social benefits per recipient. Social welfare weights are not necessarily required, but, as previously noted, in practice are widely used for demographically targeted policies or for merit goods.

MVPF and BCR differ by the choice of what goes into the numerator and denominator. Practitioners may differ in their judgement regarding whether a component is part of $\bar{B}_j$, $\bar{C}_j$, or even $\bar{D}_j$. The NSB is a determinate sum that ranks programs without any dependence on this arbitrary decision. García et al. (2021) present estimates of BCR as defined in Equation (A.14) as complementary to their estimates of NSB. They present the BCR as an intuitive measure of the social benefit per dollar of direct cost, after verifying the social efficiency of the program using the net social benefit.

Summary

Neither MVPF_j or BCR_j is the appropriate general criterion for ranking the net benefits of social programs. NSB_j is the appropriate standard. Nonetheless, for a restricted set of policies with the same overall revenue $\bar{R}$, MVPF can play a useful role. In practice, society weights the NSB_j differently across j that serve different populations. The scale of benefits is an issue for some populations (e.g., roads and power grids for the entire population), but not for all (remediation programs for disadvantaged populations). $\bar{W}_j(\bar{U}_j)$ plays an important role in judging many policies. It is embedded in $\bar{B}_j$. Irrespective of welfare weights or government revenue being fixed, basic principles of economics should be respected. If $\text{NSB}_j < 0$, the project is not worth doing. Expenditure $\bar{D}_j$ is better used elsewhere.

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